TRANSIT COOPERATIVE RESEARCH PROGRAM

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PB99-126666

TCRP Report 36

A Handbook: Using Market Segmentation to Increase Transit Ridership

Transportation Research Board
National Research Council

REPRODUCED BY: NTIS
U.S. Department of Commerce
National Technical Information Service
Springfield, Virginia 22161

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REPORT DOCUMENTATION PAGE	Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 1998	3. REPORT TYPE AND DATES COVERED Final Report

4. TITLE AND SUBTITLE TCRP Report 36: A Handbook: Using Market Segmentation to Increase Transit Ridership	5. FUNDING NUMBERS B-9
6. AUTHOR(S) Rebecca Elmore-Yalch PB99-126666	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Northwest Research Group, Inc. Bellevue, WA	8. PERFORMING ORGANIZATION REPORT NUMBER Project B-9
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) The Federal Transit Administration 400 7th Street, S.W. Washington, D.C. 20590	10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES Sponsored in cooperation with the Transit Development Corporation

12a. DISTRIBUTION/AVAILABILITY STATEMENT Available from: Transportation Research Board 2101 Constitution Avenue, N.W., Washington, D.C. 20418	12b. DISTRIBUTION CODE: unlimited

13. ABSTRACT (Maximum 200 words)

This handbook will be of interest to transit managers, marketing professionals, planners, and others interested in the potential implementation of market segmentation strategies to increase transit ridership. Market segmentation is the identification of groups of people--or market segments--that have similarities in characteristics or needs who are likely to exhibit similar purchase behavior and/or responses to changes in the marketing mix. This handbook provides an overview of market segmentation--what it is and why it is relevant to public transit agencies. It serves as an introduction for managers to the basic concepts and approaches of market segmentation and provides steps and procedures for marketers or market researchers who have the responsibility for implementing a market segmentation program. The handbook places special emphasis on issues that must be addressed when using market segmentation, procedures and terminology that one may encounter in connection with segmentation, problems likely to arise in implementing segmentation studies, ways to encourage the use of market segmentation at transit agencies, and methods to translate segmentation findings into strategy. Private and public sector examples of market segmentation analyses are used extensively throughout the handbook to illustrate concepts presented. In addition, the handbook provides the results of market segmentation analyses performed as part of this project at three demonstration transit agencies: Boise Urban Stages, the Milwaukee County Transit System, and the Washington Metropolitan Area Transit Authority. As a result of these demonstrations, key market segments are identified and reported in the handbook.

14. SUBJECT TERMS Public Transit	15. NUMBER OF PAGES
	16. PRICE CODE

17. SECURITY CLASSIFICATION Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT

TRANSIT COOPERATIVE RESEARCH PROGRAM

Report 36

A Handbook: Using Market Segmentation to Increase Transit Ridership

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Bellevue, WA

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Subject Areas
Public Transit

Research Sponsored by the Federal Transit Administration in
Cooperation with the Transit Development Corporation

TRANSPORTATION RESEARCH BOARD
NATIONAL RESEARCH COUNCIL

NATIONAL ACADEMY PRESS
Washington, D.C. 1998

TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in *TRB Special Report 213—Research for Public Transit: New Directions,* published in 1987 and based on a study sponsored by the Urban Mass Transportation Administration—now the Federal Transit Administration (FTA). A report by the American Public Transit Association (APTA), *Transportation 2000*, also recognized the need for local, problem-solving research. TCRP, modeled after the longstanding and successful National Cooperative Highway Research Program, undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes a variety of transit research fields including planning, service configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA; the National Academy of Sciences, acting through the Transportation Research Board (TRB); and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Committee.

Research problem statements for TCRP are solicited periodically but may be submitted to TRB by anyone at any time It is the responsibility of the TOPS Committee to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Committee defines funding levels and expected products.

Once selected, each project is assigned to an expert panel, appointed by the Transportation Research Board. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired impact if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended end users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

The TCRP provides a forum where transit agencies can cooperatively address common operational problems. The TCRP results support and complement other ongoing transit research and training programs.

TCRP REPORT 36

Project B-9 FY'95
ISSN 1073-4872
ISBN 0-309-06268-3
Library of Congress Catalog Card No. 98-60505

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The members of the technical advisory panel selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and while they have been accepted as appropriate by the technical panel, they are not necessarily those of the Transportation Research Board, the National Research Council, the Transit Development Corporation, or the Federal Transit Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical panel according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

To save time and money in disseminating the research findings, the report is essentially the original text as submitted by the research agency. This report has not been edited by TRB.

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Published reports of the

TRANSIT COOPERATIVE RESEARCH PROGRAM

are available from:

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and can be ordered through the Internet at
http://www.nas.edu/trb/index.html

Printed in the United States of America

FOREWORD

By Staff
Transportation Research Board

This handbook will be of interest to transit managers, marketing professionals, planners, and others interested in the potential implementation of market segmentation strategies to increase transit ridership. Market segmentation is the identification of groups of people—or market segments—that have similarities in characteristics or needs who are likely to exhibit similar purchase behavior and/or responses to changes in the marketing mix. This handbook provides an overview of market segmentation—what it is and why it is relevant to public transit agencies. It serves as an introduction for managers to the basic concepts and approaches of market segmentation and provides steps and procedures for marketers or market researchers who have the responsibility for implementing a market segmentation program. The handbook places special emphasis on issues that must be addressed when using market segmentation, procedures and terminology that one may encounter in connection with segmentation, problems likely to arise in implementing segmentation studies, ways to encourage the use of market segmentation at transit agencies, and methods to translate segmentation findings into strategy. Private and public sector examples of market segmentation analyses are used extensively throughout the handbook to illustrate concepts presented. In addition, the handbook provides the results of market segmentation analyses performed as part of this project at three demonstration transit agencies: Boise Urban Stages, the Milwaukee County Transit System, and the Washington Metropolitan Area Transit Authority. As a result of these demonstrations, key market segments are identified and reported in the handbook.

Public transit exists in a competitive environment where many potential customers have choices ranging from driving alone to telecommuting. For a variety of reasons, transit ridership has generally been declining. In the face of declining ridership trends nationwide as well as in many localities, transit managers are challenging their organizations to find the most effective methods of maintaining and increasing ridership. New methods are being developed in an environment of limited budget resources.

Delivery of new or improved transit service is critical to taking advantage of new market opportunities. Market research can be used effectively by managers to scan and evaluate opportunities that exist for increasing ridership, particularly by establishing a base of knowledge on local customers. One market research tool—frequently used effectively in the private sector—is market segmentation. Transit services often are designed and operated effectively with little or no consideration of the market segments to be served. However, there is an increased awareness that all current and potential transit users are not the same, and that satisfying their needs, preferences, and motivations requires a better understanding of who they are. Thus, transit system managers are learning that analysis of market segments can lead to an even higher degree of success while making the service design and promotion more cost efficient.

Market segmentation provides the transit manager with a better understanding of the customer, and it can promote a better balance between the operational and promotional functions of the transit agency.

Under TCRP Project B-9, research was undertaken by the Northwest Research Group, Inc. to develop guidelines for transit managers to effectively use market segmentation in developing strategies to increase ridership. To achieve the project objectives, the researchers conducted an extensive literature review of market segmentation strategies; identified and documented 15 case study examples of organizations—in both the private and public sectors—that have successfully employed market segmentation methods and strategies; and conducted significant market segmentation analyses at three demonstration transit agencies. At each of the three transit agency demonstration sites, 1,000 telephone interviews (taking 35–40 minutes each) were conducted to identify characteristics lending themselves to potential market segmentation analyses. The results of these analyses have been incorporated into the handbook.

An unpublished companion report, prepared under this project and entitled *Using Market Segmentation to Increase Transit Ridership—Final Report,* summarizes the various tasks undertaken during the project and describes in detail the case studies and the analyses performed at the three demonstration transit agencies. This companion report is available on request through the TCRP, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

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Using Market Segmentation to Increase Transit Ridership A Management Guide

Overview

Does your agency suffer from . . .

1) A "fuzzy" business mission?
2) Unclear objectives?
3) Trying to be all things to all people and consequently not serving any customers particularly well?
4) Information that is not decision-oriented?
5) An operations-oriented focus – that is, routing and scheduling reflect operational or in some cases political desires and do not reflect customer needs?
6) An unfocused promotional strategy?
7) Scarce resources for the development of new products or services or the implementation of a marketing or public education campaign?

If you answered "yes" to one or more of these questions, your are not alone. Understanding and adopting a market segmentation strategy can make it easier for you to answer "no" to all but the last of these questions, and will make the problem of scarce resources become an opportunity for the development of innovative and cost-effective programs and services.

What is "market segmentation"? The basic proposition behind market segmentation is that most – probably all – markets are not monolithic but instead consist of submarkets that are relatively homogeneous in terms of certain essential characteristics. These submarkets are market segments.

Market segments consist of groups of people or organizations that are similar in terms of how they respond to a particular marketing mix or in other ways that are meaningful for marketing planning purposes.

Market segmentation is the process by which segments are identified. That is, you perform segmentation expecting to find some market segments responding more positively than others do to marketing variables. This process of market segmentation generally involves the use of consumer research. Analysis of consumer characteristics, attitudes, and behaviors form the basis for market segments.

Market segmentation is the identification of groups of customers – or market segments – that have similarities in characteristics or similarities in needs who are likely to exhibit similar purchase behavior and/or responses to changes in the marketing mix.

Using a market segmentation strategy will help you improve your agency's competitive position and better serve the needs of your customers. An effective strategy will enable you to . . .

- Increase ridership (both by increasing the frequency of riding and attracting new riders).
- Increase transit's share of mode choice in your market.
- Efficiently allocate resources to markets that represent the greatest potential for change in light of changes to the marketing mix.
- Enhance the image and reputation of public transportation to increase support for public funding.

Market segmentation can serve as the cornerstone of an efficient overall strategy. Research has shown that if you identify relatively stable market segments that can be effectively reached, you will achieve increases in ridership by marketing to these segments, beyond ridership increases possible from treating the market as homogeneous. The marketing research and analysis that is an integral part of the market segmentation process will enable you to . . .

- Design responsive products to meet the needs of the marketplace.
- Develop effective and cost efficient promotional strategies.

Moreover, this research will . . .

- Provide you with insight on present marketing strategies.
- Provide you with reliable data on which to base resource allocation decisions.
- Provide you with important data on which long-range planning – for market growth or product development – can be based.

In summary, market segmentation provides the necessary research base on which all other marketing strategies can be successfully formulated. This includes all aspects of marketing – product and service development, route structure, pricing and fare programs, and communications. Following segmentation, the agency can select ***target markets*** – one or more groups that will respond favorably to certain product or service configurations and messages about these products or services. The agency can then ***position*** its products and services by developing unique marketing strategies to appeal to the selected target market(s).

Segmentation research analyzes markets, finds niche opportunities, and capitalizes on a superior competitive position – enabling you to better serve the needs of your customers. Segmentation-driven strategy can help agencies design responsive products, develop effective promotional strategies, understand emerging trends in the marketplace, and fine-tune current market initiatives. In summary, it is a systematic approach for controlled market coverage and expansion.

Is your agency using market segmentation, and if so, are you using market segmentation techniques as well as possible? This handbook covers

- The **issues** that you need to address when using market segmentation.
- The **procedures** and **terminology** that you may encounter in connection with segmentation.
- **Problems** that may arise in implementing segmentation studies.
- **Strategies** that may prove useful in encouraging the use of market segmentation at your agency.

Segmenting Transit Markets – Common Bases for Segmentation

A market can be segmented in many ways. As a rule when selecting target markets, these markets should be compatible with your agency's goals and objectives. Moreover, it is important to match the market opportunity represented by the target market with the resources of the agency.

The first step in the market segmentation process is to identify the basis on which the market will be segmented.

Demographic, **socioeconomic**, and **geographic** segmentation bases and variables provide important information about individuals within specific markets. Segmenting markets by these physical dimensions is a logical starting point for several reasons:

- The data is relatively easy to obtain.
- It is generally less expensive than other forms of segmentation research.
- It provides a quick snapshot of a market (an understanding of market structure and potential customer segments).
- Populations can be sampled and accurately projected to represent characteristics of the entire market.
- The information gathered can be of great value for decision-making.
- The data corresponds to other available data and information for decision-making.

Product usage segmentation is particularly applicable to transit. This is frequently the next step taken once agencies have exhausted the possibilities of segmenting by demographics and/or geodemographics. In the transit industry, segmenting based on product usage is synonymous with segmenting based on ridership – notably frequency of ridership. Segmenting markets based on product usage provides five major benefits:

- Like demographic segmentation, this is a relatively simple methodology to use. Risks and costs can be relatively low.
- It is a useful dimension for understanding transit markets based on past ridership behavior.
- It can be used to identify strategies to retain frequent riders who are generally transit-dependent and often stop riding when other modes become available.
- It can be used to identify strategies to increase consumption among light and medium users in highly competitive markets.
- By providing additional benefits or focusing on neglected market segments, it is possible to convert nonriders to riders.
- Unlike psychographic and benefit segmentation, segmenting based on product usage is generally easy to implement and requires less complex analysis. It is also less expensive depending on the incidence of riders in the general population.

Customers and noncustomers' **attitudes** toward a specific product or service category is another frequently used type of basis variable. This is especially useful for developing advertising and promotion programs, because it enables advertising agencies to understand what people think and feel about their needs in a specific product or service category.

One of the more powerful segmentation approaches – **psychographics** – has come a long way since the term was first coined nearly twenty years ago. Psychographic research seeks to describe human characteristics of consumers that may have bearing on their response to products, packaging, advertising, and public relations efforts. Such variables may span a spectrum from self-concept and lifestyle to attitudes, interests, and opinions, as well as perceptions of product attributes. Segmentation based on psychographics has proven to be most useful in. . .

- Identifying target markets.
- Explaining consumer behavior.
- Improving an agency's strategic marketing efforts.
- Minimizing the risks for new products, services, or other ventures.

Benefit Segmentation is based on the belief that the benefits that people seek in consuming a given product are the basic reasons for the existence of true market segments. Benefits are the sum of product advantages or satisfactions that meet an individual's needs or wants. They extend beyond product features and serve to satisfy physical, emotional, or psychological needs. Benefit segmentation is found to provide the marketer with a new perspective and added insight into market situations. When properly executed, this approach is widely acknowledged as one of the best ways to segment markets. Some advantages of benefit segmentation include:

- Benefit segments are based on the reasons consumers buy.
- Benefit segmentation is an appropriate segmentation base in many types of situations.
- Benefit segments are based on causal factors rather than descriptive factors.
- Benefit segmentation is a method with great flexibility.
- Benefit segmentation can be used in conjunction with other closely related segmentation bases and variables.

A Practical Approach to Market Segmentation

How do you introduce or improve segmentation procedures and activities at your agency? Effective and cost-efficient segmentation analysis requires the following inputs:

- **Superior planning** – A managerial framework emphasizing planning and research guidelines leads to effective segmentation studies.
- **Solid research** – Choosing the optimal blend of primary, secondary, syndicated, and data base sources.
- **Selecting the "right" segmentation dimensions** – These include geographics, demographics, usage and other behavioral measures, benefits, and psychographics.
- **Strategy development** – Target market selection, positioning, nichemanship, and formulating the proper marketing mix based on product, pricing, promotional, and distribution elements.
- **Implementation and control** – Working, evaluating, and revising the segmentation plan.

A good segmentation plan requires . . .

1) Insuring management involvement and buy-in by . . .
    - Involving them early in the process.
    - Keeping them informed.
    - Involving them in any decisions along the way.
2) Establishing budgetary constraints by . . .
    - Including both in-house and outside vendor costs in analysis.
    - Recognizing cost / benefit trade-offs (anticipate expected value of research).
3) Obtaining outside assistance as required. Outside assistance is most likely to be required in the design of the research, data collection, and analysis.
4) Establishing research objectives that include clear statements regarding the . . .
    - Project background.
    - Project purpose.
    - Research objectives.
5) Specifying target population measurements that clearly describe your customers.
6) Stating relevant definitions regarding . . .
    - The market or service area to be included in the study.
    - Key demographic and socioeconomic classifications to evaluate, criteria for determining benefits or lifestyles, and consumption measures that will be included.

7) Establishing criteria for segmentation viability that insures . . .

- The importance of the market segment can be ***rated*** relative to other marketing opportunities.
- The market is ***realistic*** in size.
- Members of the market can be easily ***reached***.
- Customers will ***respond*** to marketing initiatives.

8) Developing market segments that . . .

- Have similar characteristics.
- Are distinct from other segments.
- Represent a sizable population.
- Provide meaningful segment data that is actionable.

8) Selecting the appropriate bases for segmentation by . . .

- Developing a segmentation model.
- Identifying physical bases – geographic, demographic, geodemographic.
- Identifying behavioral bases – psychographics, benefits, and product use.

9) Collecting the data by . . .

- Considering the applicability of secondary, primary and syndicated data.
- Selecting the best method of data collection – telephone or personal interviews.

10) Employing appropriate sampling procedures. This generally means using probabilistic or random samples.

11) Analyzing and interpreting the data by following an analysis plan that . . .

- Specifies coding and tabulation requirements.
- Defines the statistical analysis – including any multivariate procedures – that will be employed.
- Uses complex models and advanced techniques only as needed.

Translating Segmentation Findings Into Strategy

The results of a market segmentation study can be informative, insightful, and even fun. Once the segmentation analysis is complete, however, the hard work begins. The real value of segmentation analysis lies in its ability to be translated into actionable strategies.

A simple three-step process can be used for strategy formulation.

1) **Identify the project or decision**. Consider projects or decisions your agency is presently considering and determine whether segmentation analysis is appropriate for that project or decision. Some examples of projects for which segmentation analysis might be considered include: new services, special promotions, pass or other fare media programs, advertising, special events, passenger information services, direct mail campaigns, guaranteed ride home programs, etc. Once the project or decision is identified, then . . .

    a) Determine the applicability of segmentation analysis to this project.

    b) Create a project team.

2) **Conduct a situation analysis**. If it is determined that segmentation analysis is applicable to this project, the project team should first conduct a situation analysis. This step involves taking a step back and examining why your agency is considering this project or undertaking this decision. The situation analysis represents an opportunity for your agency to break out of the box and to look at the project or decision in different ways. Dare to be different! As part of your situation analysis, you should . . .

    a) Identify opportunities.

    b) Examine problems / threats.

    c) Establish goals.

    d) Evaluate current strategies.

3) **Formulate strategies**. If the situation analysis indicates that this project is worth pursuing, the next step is to formulate the strategies to employ. If this is an existing project, this may involve a revision or complete overhaul of existing strategies. For new projects, you are operating from a clean slate. As noted in the situation analysis, be creative. Try looking at the results of your segmentation analysis in different ways. Brainstorm – don't reject ideas simply because your agency has never done it that way before. The bold new approach may be critical to attract those customer segments that have been resistant but through segmentation analysis have indicated they can be reached – with just a little more effort. During the strategy formulation process you will . . .

    a) Identify target market segments.

    b) Position the segments.

    c) Specify the marketing mix.

Enhancing the Value of Market Segmentation – Some Guidelines

Market segmentation can reward your agency with some or all of these riches.

- Increased ridership.
- Improved share of mode choice.
- New customers.
- Better customers.
- More satisfied customers.
- Potentially more 'profitable' marketing and service opportunities.

This process, however, takes considerable time and effort. Success requires well-conceived and executed research. Strategies must be formulated on the research and then monitored to determine their success.

Following are five valuable tips that should form the basis of your market segmentation study. Follow these steps and you will be on your way to a well-conceived segmentation study.

1) Plan, plan, plan. Then plan some more.
2) Consult important references.
3) Recognize the dynamics of the market.
4) Use more than one basis for segmentation.
5) Get down to basics.

Segmentation represents one of the most valuable tools available for managers. Successful service plans and marketing strategies can be developed on this foundation. The following eight guidelines will assist you in managing and using market segmentation in your agency.

1) Integrate market segmentation with other management activities.
2) Get involved in the project.
3) Be realistic in your expectations.
4) Listen to the results.
5) Dare to be different.
6) Request frequent updates.
7) Get professional assistance when and where necessary.
8) Treat segmentation as an investment.

Market segmentation will continue to gain prominence in the next few years as more and more agencies – large and small – discover the power of this strategic marketing tool for attracting and keeping riders, and acknowledge its importance to the service planning and marketing functions.

Chapter

1

Market Segmentation

An Overview

Does your agency suffer from . . .

- A "fuzzy" business mission?
- Unclear objectives?
- Trying to be all things to all people and as a result not serving any of your customers particularly well?
- Information that is not decision-oriented?
- An operations-oriented focus – that is, routing and scheduling reflect operational or in some cases political desires and do not reflect customer needs?
- An unfocused promotional strategy?
- Scarce resources for the development of new products or services or the implementation of a marketing or public education campaign?

Chances are, you answered "yes" to one or more of these questions. The good news, however, is that you are not alone. Interviews with transit agencies across the United States suggest that such problems are quite typical. Even better news is that understanding and adopting a market segmentation strategy can make it easier for you to answer "no" to all but the last of these questions, and will make the problem of scarce resources become an opportunity for the development of innovative and cost-effective strategies.

The overall objective of using a market segmentation strategy is to improve your agency's competitive position and to better serve the needs of your customers. Some specific objectives may include:

- Increasing ridership (both by increasing the frequency of riding and attracting new riders),
- Increasing transit's share of mode choice in your market,
- Efficiently allocating resources to markets that represent the greatest potential for change in light of changes to the marketing mix, and
- Enhancing the image and reputation of public transportation in order to increase support for public funding.

This is not to say that it is impossible to achieve these goals using a mass marketing approach and a one size fits all product. However, as one backyard philosopher said, "I wouldn't want to have everything, and besides, where would I put it all?" This is analogous to what most marketers know. Consider the following:

- **Everyone is not a prospect for every product or service offered**. It is evident to everyone in the transit industry that not everyone rides or will ride the bus, participate in a carpool or vanpool, ride a bike to work, or otherwise leave their car at home – even for a day.
- **An agency's product or service mix must be controlled for maximum efficiency**. Recent cutbacks in funding make it increasingly important to understand customers' needs and wants in order to use these increasingly scarce resources most effectively.
- Since the product / service mix and customer pool are limited, **it is most efficient to match your products and services to customer needs and wants**.

While transit agencies often advocate being market oriented and customer focused, few agencies – large or small – use market segmentation or a targeted marketing program to their maximum potential. In spite of the many advances made in the field of marketing theory – including advances made in market segmentation methodology and technology – a majority of transit agencies still base their marketing plans on cursory, incomplete, or intuitive market analyses. However, used effectively, segmentation-based marketing strategy – strategic segmentation – provides the foundation for increasing ridership and improving overall marketing performance.

This handbook provides an overview of market segmentation without heavy reference to equations and complex formulations. It lays out and explains terminology briefly – not always an easy process – and discusses the basic methodological procedures involved. Although this handbook reviews statistical concepts inherent in segmentation research and analysis, reading it requires no advanced training. This handbook places special emphasis on:

- Issues that you need to address when using market segmentation,
- The procedures, and terminology surrounding them, that you may encounter in connection with segmentation,
- Problems likely to arise in implementing segmentation studies, and
- Strategies to encourage the use of market segmentation at your agency.

This handbook should serve both as:

- An introduction for managers to the basic concepts and approaches of market segmentation, and
- A checklist of steps and procedures for marketers or market researchers who may ultimately have the responsibility for implementing the market segmentation program.

Finally, this handbook addresses segmentation in the context of its place in an organization's strategy, not just as an exercise with numbers, because complete segmentation studies require involvement of the entire organization.

Examples are used extensively throughout the handbook to illustrate the concepts presented. Look for to quickly find your way to these examples. Summaries at the end of each chapter quickly highlight the key concepts presented. You may find these summaries particularly useful when presenting market segmentation concepts to management.

In developing this handbook, special thanks are due to the three transit agencies – Milwaukee County Transit System, Washington Metropolitan Area Transit Authority, and Boise Urban Stages – who allowed their service areas to be "test sites" for the research study that is illustrated in this handbook. Their openness to trying something new and their willingness to bare their souls to a larger audience is greatly appreciated.

Thanks are also due to the members of the project team, who worked so diligently on this research project over the past eighteen months, contributing both theoretical and practical knowledge and insight into the effort. Project team members include Lynne Morsen, Transcom, Inc. (Seattle, WA), Multisystems, Inc. (Cambridge, MA), Urbitrans, Inc. (New York, NY), John Lastovicka (Arizona State University), and Don Lehmann (Columbia University, NY). Finally, the insights of the panel members in developing the original scope of this project and the comments provided throughout the process have been integral to its success. In particular, their thoughtful comments on the first draft of this handbook were instrumental in developing a tool that can be used by many throughout your organization.

Market Segmentation – What Is It?

The Emergence of Segmentation

Many people today believe that market segmentation is the key strategic concept in marketing. However, the basic idea behind segmentation has been around since the beginning of trade. It was only in the 1950s, however, that this idea was formalized by academicians and pursued earnestly by large numbers of business firms and other types of organizations.

The late Wendell Smith proposed the concept of market segmentation more than forty years ago. In his classic 1956 article, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," Smith recognized that product differentiation and market segmentation are distinct strategic alternatives.

Smith voiced several positions in this article never stated before. Notably, he rejected the classical economic theory of perfect competition, and in particular its assumptions of unvarying supply and demand.

> Segmentation is based on the developments on the demand side of the market and represents a *rational and more precise* adjustment of product and marketing effort to *consumer or user requirements.* In the language of the economist, segmentation is disaggregative in its effects and tends to bring about recognition of several demand schedules where only one was recognized before. *(Italics added)*[1]

Smith also noted that product differentiation and segmentation have some similarities – both lead to different sets of products from a given manufacturer. However, they differ in a fundamental way – market segmentation is focused on consumer needs. In a "differentiation" strategy, the company would try to make "something for everybody," without in-depth study of any particular group within the market. Companies took a "global" view of the marketplace, and then tried to make a variety of things. Today, transit agencies frequently use a "differentiation" strategy, thinking they are using market segmentation. Offering different levels and types of bus service – fixed route, direct service, express service, neighborhood service with variable routing – in a single market exemplifies a "differentiation" strategy. Many of these services have been offered without a clear understanding of the needs of the riders and the community for which the service has been developed. The records of accomplishment of these efforts shows that while some services have achieved moderate success, others have failed miserably, attracting little or no ridership.

Smith compared product differentiation strategies to trying to take a layer of the marketing "cake" – cutting across all aspects of the market – and segmentation to taking a slice – by cutting vertically – into one area of the marketplace. Smith went on to identify the potential benefits of this focus compared with that of product differentiation.

> While successful product differentiation will result in . . . a horizontal share of a broad and generalized market, equally successful application of . . . market segmentation tends to produce a depth of market position in the segments that are effectively defined and penetrated.

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[1] Wendall Smith, "Product Differentiation and Market Segmentation as Alternative Marketing Strategies," *Journal of Marketing*, (July 1956), pp. 3 – 8.

Finally, Smith was the first to state that segmentation works more efficiently than a strategy of simply producing as many products as possible.

> Creating different products only becomes effective following segmentation. The truly successful company must first find segments and then create products and services fitting their needs.

Perhaps as much as anything in Smith's article, this idea of a "market" or "customer" orientation and the necessity for market segmentation as a cornerstone of this orientation heralded a new approach to consumers and markets.

Early segmentation efforts were largely intuitive and pragmatic, based on experience in the marketplace. This experience was sometimes supplemented by basic customer survey research to learn more about the demographics, usage habits, and attitudes of users of a specific product or service. While many companies and organizations continue to operate in this manner and believe they are using market segmentation, there have been considerable advances in the field of market segmentation in recent years. It is these advances and the potential applications of these advances to the transit industry in order to increase ridership that is the focus of this handbook.

Market Segmentation Today

Today the terms *market segment* and *market segmentation* are usually used to mean a subdivision and a system for subdividing (respectively) a market by customer types. The basic proposition of market segmentation is that most – probably all – markets are not monolithic but instead consist of submarkets that are relatively homogeneous in terms of certain essential characteristics. These submarkets are market segments. A more formal definition of a market segment follows.

> **Market segments** consist of groups of people or organizations that are similar in terms of how they respond to a particular marketing mix or in other ways that are meaningful for marketing planning purposes.

Market segmentation is the process by which segments are identified. That is, you perform segmentation expecting to find some market segments responding more positively than others do to marketing variables. This process of market segmentation generally involves the use of consumer research. Analysis of consumer characteristics, attitudes, and behaviors form the basis for market segments. A simple definition of market segmentation follows.

> **Market segmentation** is the identification of groups of customers – or market segments – that have similarities in characteristics or similarities in needs who are likely to exhibit similar purchase behavior and/or responses to changes in the marketing mix.

There are several important elements to these definitions. First, to be meaningful, a market segment must have some characteristics that are common to members of a segment and, equally important, that ***differ from the characteristics of other segments***. Segment members might vary on a number of characteristics, including demographic characteristics, geographical region, lifestyle, usage patterns, attitudes, and behavioral factors.

Market segments are frequently established on the basis of income, age, gender, occupation, and complex behavioral dimensions.

Moreover, as the above definitions suggest, the differences between market segments must be ones that are, or might become, significant for the design of a marketing strategy. This key point distinguishes ***market segments*** from ***groups***. Many organizations have conducted significant research that identifies ***groups*** – that is, groups of customers or noncustomers that differ in terms of demographic characteristics and, in some cases, attitudes. However, these groups do not differ meaningfully in terms of behavior or in their responses to marketing activities. For example, many transit agencies have identified nonriders as a market segment. They are considered a market segment because they generally have a common set of attitudes. For example, when asked, most nonriders will agree that they do not use transit because it is inconvenient and inflexible. Considerable time and energy has gone into converting nonriders to riders with little or no effect. This is because nonriders as a group are unlikely to respond favorably to changes in the marketing mix.

Market segments are different from ***groups*** in that their response to a separate product or market strategy will be different from that of another market segment. Recently, transit agencies have looked more carefully at the nonrider market and identified target markets consisting solely of different segments of nonriders. These segments also differ in terms of attitudes and demographics. However, some segments of nonriders will respond favorably to changes in the marketing mix.

Chapter 3 of this handbook provides considerable insight into market segmentation research principles and its application to segmenting transit markets.

Market Segmentation – Why Should I Bother?

Market segmentation can serve as the cornerstone of an efficient overall strategy. Research in the private sector has shown conclusively that if you can find segments that (1) you can both identify and differentiate, (2) will remain effectively stable, and (3) can effectively be reached, a firm can increase sales and profits by marketing to these segments, beyond profits possible from treating the market as homogeneous.

Introduced in 1996 as "The Caddy that Zigs," the Catera unites fun, great handling, and luxury.

Catera is the newest offering in the entry-luxury market, expected to grow to 434,000 vehicles a year by 2000. Dominated by European and Japanese sedans in the $29,000 to $40,000 range, entry-luxury cars appeal to 'Boomers.' The question – could Cadillac's lead in *creating a higher standard* work for them?

Using high level demographic, lifestyle-values, and benefits-needs segmentation — plus a zippy German-made car — Cadillac made its key "go" decision. Cadillac relied on market research to adjust the product, set the price, create the brand personality and advertising, and support dealer sales. Potential buyers examined each marketing component — product, price, advertising, sales and distribution. "I can't put enough emphasis on the investment in research. It kept reconfirming our positioning and marketing approach," said Dennis Ephlin *(eef-lin)*, Catera Brand Analyst. "We're very passionate about it."

The research showed that the Catera is for people age 35 to 50; their average age is 44. They were young adults in the 1960s and 70s, driving smaller imports and rejecting their parents' choices. The majority are college graduates (73%) in professional positions (57%) with household incomes of $75,000 and over. Unlike the markets for Cadillac Seville and DeVille, half of Catera prospects are female; only 16% are retired.

"We did the geodemographic analysis, but to target 40-plus year olds, with incomes over $100,000 doesn't say much. We took the analysis a step further, looking at buying habits. We did segmentation based on a combination of benefits, needs, and lifestyles," said Ephlin.

Catera found that the younger, upscale professionals are self-aware, individual thinkers. They are doers and extremely active. They are ethnically diverse. Value conscious, they consider this purchase a rational indulgence. They want extras, but do not want the car to seem excessive. They are sophisticated shoppers, gathering information and tending to shop many brands and dealerships. And, they want a car that is sporty, safe, and luxurious.

In October 1996, the Catera was launched. The results? In its first calendar year ending December 31, 1997, Cadillac sold 25,411 Cateras, making it the most successful launch of an entry-luxury car in the history of the U.S. auto industry. The record had previously been held by Acura, which sold 24,700 units of the TL model in 1996, its first full year. "Catera is now firmly established as a major player in one of the industry's most hotly-contested segments," said Dave Nottoli, Catera Brand Manager.

A top-down commitment to its markets has brought all-star industry awards and favorable press from consumer magazines during Catera's first calendar year. Among the awards:

- Driver's Choice Award for Best Luxury Car, *MotorWeek*
- Best New Luxury Car, Automobile Journalists Association of Canada
- *Automobile Magazine's* All-Stars
- Best of What's New, *Popular Science*
- Edison Award, Best New Products of 1997, American Marketing Association

Additional results from the use of a strong market segmentation strategy include:

- Catera is accomplishing its objective to attract a new, younger generation of buyers to Cadillac, where the median age of customers was 63 years. The median age of the first-year Catera buyer was 56, compared with the median age of 47 for all customers in the entry-luxury segment, and the average of 44 which was Catera's original aim.
- Catera is bringing more women customers to Cadillac where, traditionally, about 30 percent of customers have been women. In the first year, 45 percent of Catera buyers and lessees were female.
- And, Catera found markets that had belonged to major competitors. Over 60 percent of recent Catera customers traded a non-General Motors product. Catera buyers most often listed Lexus as their second-choice vehicle.
- Finally, its "Caddy That Zigs" television advertising enjoys the highest aided awareness for entry-luxury cars, according to third-party research.

Market segmentation research led to General Motors' actions in tailoring the product, pricing, promotion, and showroom sales support for the most successful 'entry-luxury' auto launch in U.S. history.

While transit agencies do not generally think in terms of profits and sales like General Motors, they can benefit from the use of market segmentation research and the resulting strategies. As companies in the private sector have found, if transit agencies can (1) identify and differentiate market segments that (2) will remain relatively stable and (3) that can be effectively reached, they will achieve increases in ridership by marketing to these segments, beyond ridership increases possible from treating the market as homogeneous.

There are five major benefits of market segmentation analysis and strategy. They are:

1) **Designing responsive products to meet the needs of the marketplace**. By thoroughly researching customer preferences – an essential component of segmentation analysis – your agency will move toward an essential element of a market orientation – achieving a customer focus. The agency places the customer first and designs and refines its product and service mix to satisfy the needs of the market.

2) **Developing effective and cost efficient promotional strategies**. As a planning tool, segmentation identification and analysis is extremely valuable in developing the agency's communication mix. Advertising can be designed with a message that touches the hearts and minds of the market. These messages can be targeted to the right media vehicles. This marketing investment can be supplemented by public relations initiatives, sales promotion methods, and direct marketing or relationship marketing programs.

3) **Providing insight on present marketing strategies**. It is important to periodically reevaluate your present marketing strategies to try to capitalize on new opportunities and circumvent potential threats. Market segmentation research is useful in exploring new markets – perhaps secondary or fringe markets such as infrequent or occasional riders that might have otherwise been neglected by concentrating on primary markets, such as commuters and/or frequent riders. Moreover, effective segmentation provides a systematic approach for controlled market coverage, as opposed to the hit-or-miss effectiveness of mass marketing strategies.

4) **Providing data on which to base resource allocation decisions**. A major use of market segmentation analysis for transit is the data provided on which the agency can then make decisions about where to allocate increasingly scarce resources. This data will be particularly useful when making special funding requests.

5) **Ongoing consumer and market segmentation analysis provides important data on which long-range planning – for market growth or product development – can be based**. Finally, while market segmentation is an important tool for achieving the short-term benefits described above, perhaps its greatest strength lies in providing data for long-range planning. A thorough understanding of the characteristics of the market today, coupled with projections for future trends, can help the long-range planner develop and price products and services that will meet the needs of these markets into the future. This is particularly important where many of these new products and services represent significant capital investments.

In summary, market segmentation provides the necessary research base on which all other marketing strategies can be successfully formulated. This includes all aspects of marketing including product and service development, route structure, pricing and fare programs, and communications. Following segmentation, the agency can select ***target markets*** – one or more groups that will respond favorably to certain product or service configurations and messages about these products or services. The agency can then ***position*** its products and services by developing unique marketing strategies to appeal to the selected target market(s).

Segmentation research analyzes markets, finds niche opportunities, and capitalizes on a superior competitive position – enabling you to better serve the needs of your customers. Segmentation-driven strategy can help agencies design responsive products, develop effective promotional strategies, understand emerging trends in the marketplace, and fine-tune current market initiatives. In summary, it is a systematic approach for controlled market coverage and expansion.

Is your agency using market segmentation, and if so, are you using market segmentation techniques as well as possible? Ask yourself and others at your agency the following questions to explore this issue further.

Segmentation Checklist:
How Well Is Your Agency Using Market Segmentation Tools?

- ✓ *Does your agency segment the market served by your system? If so, why? If not, why not?*
- ✓ *What segment(s) of the market is your agency trying to serve?*
- ✓ *What are your objectives in serving this segment(s)?*
- ✓ *How successful are you in meeting this objective?*
- ✓ *What is your typical customer profile?*
- ✓ *Are target market definitions and your customer profiles based on research?*
- ✓ *What dimensions (methods) are used to segment markets?*
- ✓ *When was your last segmentation analysis conducted?*
- ✓ *How frequently are updates obtained?*
- ✓ *What is your budget for segmentation analysis?*
- ✓ *Are product or service decisions based on segmentation research?*
- ✓ *Are promotional decisions based on segmentation research?*
- ✓ *Are pricing and fare decisions based on segmentation?*
- ✓ *Are routes structured based on segmentation?*
- ✓ *Is segmentation analysis used in assessing trends and changes in the marketplace?*
- ✓ *Is segmentation analysis used to evaluate your present marketing strategies?*

Market Segmentation – Some Important Cautions

While the arguments for using marketing segmentation are strong, there are three important assumptions on which market segmentation is based. If you or your agency does not accept these assumptions, then you are not yet ready to pursue such an effort.

- **Market segmentation assumes that because consumption behavior is generally not random, it is possible to identify and isolate groups of individuals within the total market who demand different kinds of product characteristics and react differently to specific marketing strategies**. If you do not believe that different groups of individuals exist within the total market for transit services, then you are not ready for market segmentation. On the other hand, if you and your agency feel that even if these groups exist, they do not demand different products or services or do not react differently to specific marketing strategies, then you are not ready for market segmentation.

- **The use of market segmentation assumes that after the marketer has invested in analysis to define the market segments** and predict – to some degree – the best prospects for a specific product or service, that he / she is willing to select "target segments" whose needs he / she can best fulfill, and concentrate efforts on reaching and persuading primarily this portion of the total market. If you or your agency is not prepared to invest in this analysis, you are not ready for market segmentation.

- **The application of market segmentation assumes that if more than one target segment is desirable, the marketer is willing to design different marketing or product strategies for each segment**. If you or your agency is not able or willing to design different marketing or product strategies for each segment, then you and/or your agency is not ready for market segmentation. Or, if you or your agency cannot accept the premise that by segmenting the market you are implying that you will not serve some segments of that market, then you and/or your agency is not ready for market segmentation.

Finally, it is important to bear in mind that market segmentation is not the elixir that will solve all your marketing and service planning problems. To use market segmentation effectively, you must be aware of some potential shortcomings of segmentation. These include:

- **Segmentation findings may only provide a composite profile of a group**. Although research can provide meaningful marketing information, some forms of segmentation analysis reflect only expected segment decision-making, and do not necessarily indicate actual or potential behavior.

- **The greater diversity of consumer lifestyles in the 1990s has made segmentation more difficult in many markets**. Moreover, changes in consumer lifestyles are becoming more common and occurring more rapidly. To be able to effectively segment markets requires a long-term commitment of time and resources into research to identify market segments and to track changes in the composition and characteristics of these segments over time.

- **Segmentation is not a remedy for other marketing or organizational deficiencies**. The best segmentation information is worthless unless it is supported by consistent product / service, promotional, pricing, and distribution strategies that are regularly evaluated and revised as situations dictate. Moreover, market segmentation strategies are not a panacea for other potential organizational limitations.

- **Segmentation's effectiveness is limited by management's ability to implement strategic implications**. A marketing orientation requires a strong commitment – beyond mere lip service – from an agency. This includes support in the areas of personnel, resources to hire marketing consultants or staff, time investment in management, and the willingness to act on prescribed recommendations. If this is not currently present, it will not happen overnight. Findings from a market segmentation study must become an integral part of the firm's thinking process – progressing from a "report on management's shelf" to a "working resource."

- **Relatively few individuals have the understanding, expertise, and authority to incorporate this technique into an agency's marketing plan**. Hence, under-analysis of a market is common. Occasionally, companies may over-analyze the market. In one instance, a transit agency conducted four different segmentation studies over a two-year period, spending over $80,000 per study. Yet, none of these was turned into strategy.

- **Many segmentation analyses often emphasize methodological and statistical procedures over substance**. An end product of such a study is a complex model understood only by the researcher and not implemented by management – the classic report on the executive's shelf syndrome.

- **Marketing research can be expensive**. And market segmentation studies may be more expensive than other research. Management may not perceive the benefits of market segmentation analysis relative to its cost.

A major focus of this handbook is to help you better understand the process of market segmentation and to identify strategies by which your agency can avoid these pitfalls.

Summary

Market segments are . . .

- Groups of people or organizations that are similar in terms of how they respond to a particular marketing mix or in other ways that are meaningful for marketing planning purposes.

Market segmentation is . . .

- The process by which market segments are identified.
- The foundation for an overall marketing strategy.
- A process of analyzing markets, finding a niche, and developing and capitalizing on a superior position within that niche.
- Central to a market and customer orientation in which products and services are matched to customer needs and wants.

Market segmentation will enable your agency to . . .

- Design responsive products to meet the needs of the marketplace.
- Develop effective and cost efficient promotional strategies.
- Provide insight on present marketing strategies.
- Provide data on which to base resource allocation decisions.
- Have available important data on which long-range planning – for market growth or product development – can be based.

Following successful segmentation, your agency can . . .

- Identify and develop target markets that represent the greatest potential for increased ridership.
- Successfully position your products and services to appeal to these target markets.

Understanding the limitations of market segmentation will enable your agency to make better use of market segmentation analysis. These limitations include:

- Findings that may only provide a composite profile of the market.
- Changing lifestyles has made segmentation more difficult.
- Segmentation is not a remedy for other marketing organizational deficiencies.
- Segmentation's effectiveness is limited by management's ability to use the results.
- Individuals within your agency may not have the understanding, expertise, and authority to incorporate this technique into an agency's marketing plan.
- Many segmentation studies emphasize methodological and statistical procedures over substance.
- The marketing research required for market segmentation may be expensive.

Chapter

2

Segmenting Transit Markets

Common Bases for Market Segmentation

A market can be segmented in many ways. As a rule when selecting target markets, these markets should be compatible with your agency's goals and objectives. Moreover, it is important to match the market opportunity represented by the target market with the resources of the agency.

Although the concept of market segmentation is not complex, implementation is not easy. The selection of target markets should be guided by the premise that consumers are different and these differences are reflected in varying preferences. Moreover, consumers' differences are related to differences in demand for products and services. To determine a market segmentation strategy, marketers and service planners must decide how to modify their product or service to satisfy market demands. Finally, meaningful market segments of consumers must be distinguished within the aggregate market.

The first step in the market segmentation process is to identify the basis on which the market will be segmented. There is no single way to select a market segment. Different segmentation variables need to be tried, alone and in combination, in an effort to select the most appropriate market segment to be targeted. This chapter explores some of the common bases for market segmentation.

Two Basic Approaches to Segmenting Markets

Historically, segmentation has been divided into two sharply different classes:

- Pre-determined (*a priori*) segmentation or
- Market-defined (*post hoc*) segmentation.

These two approaches diverge strongly in approach, intent, and basic philosophy.

Pre-Determined (*A Priori*) Segmentation – Defined

In most cases, **pre-determined (*a priori*) segmentation involves selecting certain groups from a population based on known characteristics and declaring them "segments."** The characteristics are selected by the marketer or researcher and may be based on past research, common sense, or simply "gut" instinct.

Some definitions of pre-determined (*a priori*) segmentation provide a clear picture of the true meaning and intention of this approach to market segmentation.

> In [this approach] the researcher chooses some cluster-defining description in advance, such as respondent's favorite brand. Respondents are then classified into favorite-brand segments and further examined regarding their differences on other characteristics, such as demographics or product benefits being sought.[2]
>
> A priori segmentation designates groups of consumers who are similar in terms of some factor or factors that are known or felt in advance to be related to product / service consumption; for example, demographics, psychographics, heavy vs. light usage, brand loyalty.[3]
>
> A priori segmentation occurs when the researcher divides the market population into two or more groups based on criteria outside the scope of the research study. Conducting the study will not influence the definitions of these pre-defined segments.[4]

As these definitions imply, the use of an *a priori* classification system implies the existence of a "hunch," a highly developed body of theory, and/or past research that indicates how best to classify objects for the purpose of further research. For example, if one were to conduct an investigation of transit riders and nonriders, one might establish a category of riders who are frequent riders, another that rode infrequently, and one that does not ride. Such a classification might be based on some *a priori* judgements as to what constitutes frequent versus infrequent riders.

Some Common Bases for A Priori Market Segmentation

Bases used for pre-determined (*a priori*) segmentation vary widely depending upon goals. Some of these bases might include the following. Each of them has the advantage of providing "instant segments" if you can selectively appeal to each group.

- Riders versus nonriders, frequent riders versus infrequent riders versus occasional riders, or former riders versus current riders.
- Loyal riders versus vulnerable or nonloyal riders.
- Transit dependent riders versus choice riders.
- Commuters versus noncommuters.
- Residents of high-density areas versus suburban residents.
- Commuters to downtown CBDs versus suburb-to-suburb commuters.
- Student commuters versus work commuters.
- "High" versus "mid" versus "low" income groups.
- Geographic location as defined by zip code, census tract, or transit analysis zone.

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[2] Green, P.E., D.S. Tull, and G. Albaum, Research for Marketing Decisions. Englewood Cliffs: Prentice-Hall, Inc. (1978).
[3] Myers, J. H. and E. Tauber, Market Structure Analysis. Chicago: American Marketing Association (1977).
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Using Pre-Determined Segmentation Schemes

The principal advantage of an *a priori* approach is that the researcher is less apt to be led astray by purely fallacious classification systems that might arise if the data were permitted to speak for itself. On the other hand, when using an *a priori* approach, one's prior convictions can act more as a set of blinders than as a guide to further study and understanding. Moreover, regardless of the complexity of reality, marketers and researchers find it difficult to classify objects by more than two or three characteristics at a time – for example ridership and age. If reality requires greater complexity (i.e., a more elaborate multidimensional classification scheme), *a priori* approaches are severely constrained by the marketer or researcher's conceptual limitations.

There are many occasions when using a pre-determined segmentation strategy is highly appropriate. For instance, you might take this approach when:

- **Study goals include exploring or understanding differences between known segments.** Often the intent here is to try to remedy some problem or deficiency or to explore or test the effectiveness of different strategies against a target market. For example, you might wish to explore why former riders no longer ride transit and what strategies may encourage this segment to ride again. Or, you might want to understand why infrequent riders do not ride more often and what strategies could encourage this segment to ride more. Customer satisfaction research is a common example where the study goals call for focusing on a specific market – existing riders – and exploring or understanding differences between known segments within this market.

Throughout the 1980s, the City of Chicago lost population and employment to the surrounding suburbs. Between 1980 and 1990, the suburban population increased 9.3 percent, while Chicago lost 7.3 percent of its population. Jobs migrated to the suburbs as well. By 1990, jobs in the suburban areas of Chicago served by Pace supported 2.2 million jobs, an increase of 24.7 percent, while the central city lost 6.2 percent of its jobs. As a result, by 1990, the Pace service area housed more people and more jobs than the central city. This trend is expected to continue. In 2010, the Pace suburban area is projected to have 5.2 million residents and 2.9 million jobs.

In order to assess the impacts of these changes, Pace commissioned a telephone survey of users and nonusers in 1995. The sample consisted of 300 Pace riders and 300 nonriders. Each group was broken down proportionately by market segment: (1) suburb-to-suburb, (2) suburb-to-city, and (3) city-to-suburb. (These segment definitions had been used in previous Pace research.) Based on this research, Pace summarized the characteristics of users and non-users in the three market segments. Some of the major findings included the following:

- The highest levels of marriage, education, income, and home ownership were found in the suburb-to-city market. The lowest levels were found in the city-to-suburb market.
- The city-to-suburb market included the youngest customers (35.8 years) and the highest female market share (72%).
- The highest African American market share (59%) was found in the city-to-suburb market.

- Economic differences between users and non-users were least pronounced in the suburb-to-city market.
- City-to-suburb users had a significantly more downscale economic profile than non-users in this market.

Following the research, Pace prepared its first Marketing Plan. The plan focused on work trips, which make up 80 percent of Pace's customer base, and identified the following opportunities for attracting automobile users to transit:

- Reduce transit travel time in relation to driving time.
- Increase opportunities for convenient park-and-ride.
- Increase awareness of actual driving costs.
- Evaluate potential to convert carpool commuters to vanpool passengers.
- Create opportunities for alternative fare payment mechanisms.

Pace further translated these goals into specific strategies for serving each market segment through pricing, promotion, and service. Addressing the suburb-to-suburb market, Pace established the following goal:

> *Gain 905 additional daily trips by increasing utilization rates for existing customers, decreasing the defection rate for existing customers, and attracting new customers.*

Specific strategies for achieving this goal include:

- **Increase Utilization Rates**. Pace determined that 10 percent of customers in this market use the service less than four days per week. Increasing their utilization rate by one day per week would add more than 2,000 trips per day. This could be accomplished by

  - *Implementing new magnetic striped passes to take advantage of anticipated new fare box equipment*. Pass options could be structured to increase system use.
  - *Allowing students to ride at discounted fares at any time rather than restrict use to weekday school trips*. This would encourage additional trip taking and develop a long-term customer base.
  - *Promoting cost savings associated with riding the bus*. Infrequent Pace riders may not be considering the true costs of their occasional auto commutes.
  - *Installing more bus shelters* to improve waiting conditions. Infrequent riders may avoid using Pace during inclement weather.

- **Increase Customer Retention**. The average customer remains for 64 months. Increasing this rate by only one month would increase Pace's customer base by 964 daily riders. This could be accomplished by

  - *Offering discounts to long-term customers* through the ticket-by-mail program. Providing discounts to loyal customers can be a cost-effective means of reducing attrition.

- *Promoting cost savings associated with continued use of Pace compared with buying, maintaining, and insuring a car.* A large percentage of former Pace users left when they purchased an automobile.

- *Implementing a customer satisfaction monitoring system through an on-board survey.* This would allow Pace to identify and address service-related issues quickly.

- **Attract New Riders**. Population and growth in this market is expected to generate 905 new riders per day, which was the basis of the goal for the suburb-to-suburb market. This can be accomplished by

  - *Offering free trips to new riders.* Pace determined that nonusers rated Pace lower than customers did. A trial ride may change this perception and lead to increased use.

  - *Developing a uniform mechanism for employer-based fare subsidies*, targeted at large employers in well-served markets. Large employers are generally more willing to consider subsidies if significant service is available and the benefit can be extended to all employees.

  - *Using direct mail to promote availability of Pace service to potential customers along existing routes.* Most nonusers have no idea where the routes near their homes actually go.

  - *Implementing one new route in a market that is underserved.*

  - *Increasing the number of signs and shelters along Pace routes.* Increasing Pace's visibility can help promote the service among nonusers.

Similar goals and strategies were established for the other three markets identified by Pace. The market research on which these strategies are based has enabled Pace managers to understand the unique needs of each segment. By linking the findings of its market research activities directly to service planning and promotional activities, Pace is working to design and operate services that are attractive to its customers and better meet their travel needs.

Sources: Pace *Marketing Plan*.

- **Previous research has revealed segments that you can reuse**. For example, previous research may have defined segments of riders based on frequency of riding, attitudes, or demographic characteristics that clearly exhibit the distinguishing features between groups of riders and market segments – that is, they respond differently to marketing programs or other strategies. Using results from previous research has been particularly useful when Tri-Met (Portland, OR) conducts focus group research as illustrated below.

In 1993, Tri-Met (Portland, OR) conducted an initial or baseline segmentation study that identified market segments that have since become the core of the agency's marketing and service planning strategies. Tri-Met's advertising campaigns have used their segmentation schema developed from this comprehensive research program.

Since 1993, Tri-Met's ad campaigns have appealed to potential riders who agreed that 'we have to change our attitudes about how we use our cars', said they had already made changes in the way they do things for environmental reasons, and linked Tri-Met with a high quality of life. Advertising was pre-tested in focus groups recruited only from the likely-to-ride segments. "While *everyone* is our market, the anti-transit opinions are heard elsewhere. We talked only with people who *would* ride, and in *their* language. The participants helped us shape things for *all* potential rider groups," said Lyon. "It was productive and positive." Tri-Met's theme, *How we get there matters*, reinforces the pro-transit attitudes of current and potential riders.

Source: *Market Segmentation Study for Tri-County Metropolitan Transportation District of Oregon,* October 1993.

- **"Pre-segmentation" schemes are available and you believe they will provide actual segments**. For example, you may elect to use one of the many standardized schemas such as PRIZM or VALS and determine which group, if any, a proposed new product or service might appeal to the most. Or, geodemographic segmentation using census or other data may help to narrow the focus to one or more specific markets or segments. This approach is particularly applicable when studying specific route and scheduling strategies. Additional, highly targeted research can then be conducted to develop strategies to reach the identified targets.

The Metropolitan Transit Development Board and the San Diego Association of Governments used market segmentation to identify potential transit customers. After identifying transit corridors with low ridership, MTDB used this approach to target potential customers based on their demographic profile. Surveys of riders and nonriders in the corridor further provided the transit agency with an opportunity to address concerns – for example safety and security – in specially tailored promotional materials.

IN 1995, MTDB developed a market-based strategy to target potential riders in specific transit corridors. Based on past survey research, passenger counts, and census data, MTDB marketing staff focused on the State Route 94 transit corridor in central San Diego. Analysis of sociodemographic information (including household income, vehicle availability, and licensed drivers) showed that the residents along this corridor had characteristics frequently associated with transit ridership. Although this corridor was well served by transit, ridership was lower than would be expected.

Armed with an identified target, highly targeted research identified perceptions of safety as a key concern affecting transit ridership in this corridor. This finding was consistent with earlier surveys conducted by SANDAG. Using the information developed through these market research efforts, MTDB developed a ridership guide tailored to the SR94 corridor that included a map of the area and listed available transit routes, headways, park-and-ride facilities, key destinations, and other information. The guide also discussed security measures used on the system, including off-duty police officers. The guide, which also included tickets for a free round trip, was mailed to more than 20,000 households in the corridor.

The program was an unqualified success. MTDB tracked ridership – including use of the free tickets – on the routes in the SR94 corridor in the months following the promotional mailing. Results showed:

- The redemption rate on the free ride tickets was 22 percent – surpassing both retail industry standards and other MTDB direct mail projects to date.
- In August 1995 – the month of the promotion – 27,567 additional passengers rode the promoted routes compared to the same period in the previous year.
- Even after deducting the redeemed free ride tickets, ridership was up more than 12,600 passengers.
- Promoted bus routes averaged a 4.98 percent ridership gain, despite an average cut in service hours of 2.39 percent.
- Ridership on promoted bus routes surpassed the overall system increase by 1.94 percent.

MTDB has applied this strategy to other corridors since the initial strategy was developed in 1995.

Source: Linda Culp and Julie Jamarta, "Planning San Diego's Transit System Using GIS." Prepared for National Conference on Geographic Information Systems for Transit, August 1995.

Some Cautions Regarding the Use of *A Priori* Segmentation

Pre-determined segmentation schemes get frequent use, especially because organizations can often perform them with little or no expense devoted to primary use. Moreover, as illustrated in the previous section, the use of such segmentation schemas are appropriate in some cases. However, these approaches should be used with care.

First, the terms *segment* and *segmentation* get their most abuse in connection with various "a priori" schemes. In fact, many transit agencies believe they are employing market segmentation based on "a priori" schemes. A closer analysis of the market, however, suggests that while they have defined groups of customers, they have not defined market segments. For instance, an agency may state that "people over 65," "women," or "commuters" constitute "segments." In some cases these are indeed important segments – that is, these groups do respond differently to alternative products and messages. All too often, however, no research is conducted to determine whether these groups do respond differently. Launching an expensive program – for example, a direct mail campaign or developing a specific service program targeted to the identified group – without the necessary follow-up research may result in targeting a group of people that do not respond differently than another group of customers.

Another major problem with pre-determined segmentation approaches is that they frequently ignore the fact that our society has been, and remains, dynamic. Segmentation schemes developed three or four years ago may not be appropriate today. In all likelihood, the environment has changed in some way that will influence the way in which these existing segments respond, or do not respond, to different marketing and service strategies. That is, segments that at one time responded differently may in fact no longer respond in the same way at all. This is a particular weakness with the use of census data that is updated once every ten years. Shifts in population and rapidly growing cities such as Las Vegas, NV or Boise, ID look very different in 1998 than they did in 1990. The proper way to check this is to keep investigating the market, testing segments periodically to check their stability.

Definitions of pre-determined segments may, in fact, prove to be highly unstable. For instance, consider the "commuter" market of today compared with the "commuter" market of five to ten years ago. Traditionally, the majority of the commuter market consisted primarily of men, who lived in a suburban community and who traveled to a downtown central business district. More recently, this segment has fragmented. No longer is the commuter market strictly men in business suits traveling back and forth. Women have become a major part of this market. Moreover, women respond differently to existing product and service offerings. Similarly, the market has fragmented further based on the direction of the commute. While the traditional suburb to CBD commute continues to form an important component of the market, there has been significant growth in the suburb-to-suburb commuter market. In some markets (e.g., Seattle), there has also been significant growth in the reverse commute market – that is, commuters who have chosen to live in the city but commute to suburban work locations.

Finally, **pre-defined groups that include some "life-style" information get substituted for segmentation that is genuinely connected with the product or service**. While information from these services has many important uses, neither these nor any other "off the shelf" information should ever substitute for serious thought about – and the investigation of – the marketplace. It is far worse to segment a market incorrectly than to treat it as one mass market.

Market-Defined (*Post Hoc*) Segmentation – Defined

Market-defined (*post hoc*) segmentation attempts to identify segments based on actual market investigations, notably analysis of answers to survey questions intending to predict marketplace responses. Again, some alternative definitions of market-defined (*post hoc*) segmentation clarify the contracts between this approach and pre-determined (*a priori*) segmentation.

> Post hoc segmentation [occurs when] respondents are clustered according to the similarity of their multivariate profiles regarding such characteristics, not used in the original profile definition. In post hoc segmentation, one does not know the number of clusters or their relative size until the cluster analysis has been completed.[5]
>
> In contrast [to a priori segmentation], response-based [market-defined] segmentation looks for patterns of product usage, attitudes, perceptions, and the like, that might hopefully signal useful market segments.[6]
>
> Post hoc segmentation occurs after the researcher has: (1) thoroughly analyzed the data, (2) determined that patterns differ considerably between two or more subgroups found in the data, and (3) determined that these subgroups can be consistently and concisely defined.[7]

Post-hoc segmentation **always** requires some form of primary research. Moreover, a variety of multivariate techniques (e.g., cluster analysis, automatic interaction detection, correspondence analysis, conjoint analysis-based clustering) may be used to identify the market segments.

Some Common Bases for Post Hoc Segmentation

The number of possible bases for market-defined segmentation appears limitless. The sole restricting factors consist of problems at hand, the imaginations of the people trying to resolve these problems, and frequently, time and cost considerations. Following is a useful classification of some of the variables that are often used for market-defined, post hoc segmentation schemas:

Product Selection Behaviors	**Mode Selection Behaviors**
Usage rates and occasions (e.g., frequency of riding or trip purpose) Knowledge of and experience with product Substitutability of related categories (e.g., availability of alternative modes)	Favorite travel mode Acceptable modes Disliked modes Mode loyalty versus mode switching
Product Class-Related Attitudes	**Mode Related Attitudes**
Benefits sought Problems encountered using product / service Attribute utilities of mode	Awareness and perceptions Mode user imagery Perceived appropriateness for use occasions
Person-Related Attitudes	**Other Bases**
Self-perceptions Values Life style Other "psychographics"	Stage in life cycle Socioeconomic status Ethnicity Other demographics

Given all the possible variables that can be used, questions often arise as to which work best with different study goals. Moreover, many organizations attempt to be too ambitious and try to address several goals with a single study. The following list provides a general overview of the types of variables that correspond to specific study goals. Moreover, referring to this list can help an organization determine whether studies with multiple goals are too ambitious given the amount of data that would be required.

- **Studies providing a general understanding of a market**: Benefits sought, needs the product will fill, product / service purchase and/or use patterns, mode loyalty and switching patterns.

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[5] Green, Tull, & Albaum, Research for Marketing Decisions.
[6] Myers & Tauber, Market Structure Analysis.
[7] Neal, Strategic Marketing Research.

- **Studies focusing on product / service positioning**: Product / service usage, product preferences, benefits sought, needs the product / service will fill, product-, user-, and self-perceptions.
- **Studies of new product / service concepts and introduction**: Reaction to new concepts (intention to use, preference over current mode), benefits sought, product / service usage patterns.
- **Studies of pricing / fare decisions**: Price / fare sensitivity by use patterns.
- **Studies for advertising / marketing communications decisions**: Benefits sought, needs, psychographics / lifestyles, product-, user-, and self-perceptions.
- **Studies for routing and scheduling**: Use of / loyalty to current route, sensitivity to changes in route structure, benefits sought in route structure / accessibility.

An Application of Post Hoc Segmentation

The difference between a priori and post hoc segmentation is better illustrated through the use of examples. The North Carolina Department of Transportation used very simple and very sophisticated methodologies for identifying market segments in advance of introducing new rail corridors – the *Piedmont* and later, the *Carolinian*. Both methods relied on post hoc segmentation methods.

The *Carolinian* passenger train service operates in the Charlotte-Greensboro-Raleigh corridor of the Piedmont region of North Carolina. The *Carolinian* operated from October 1984 to September 1985 and was terminated due to lack of funding. Following the termination of the *Carolinian* service in the fall of 1985, officials of the State of North Carolina sought to restore rail passenger service through the Piedmont region of North Carolina. Research was commissioned to support the analysis of the operation of this intercity rail service.

The overall goal of the study was to examine the demand for intercity rail passenger service in the study corridor. Specifically, the major objective of the research was to develop a demand-forecasting tool that could be used to estimate ridership and revenue for alternative rail services that might be provided in the study corridor. Recognizing the need to understand the market for intercity rail services and to provide tools for better marketing the service, a second objective of the research was to characterize the market for intercity passenger rail service in the Piedmont corridor.

The research was conducted using a computer-based survey of potential rail travelers. It was conducted at shopping malls in the four largest cities in the study corridor. The interview collected a variety of information from respondents, including their attitude toward and experience riding an intercity train, the characteristics (origin, destination, purpose, frequency, etc.) of the train trip the respondent would most likely take, and the sociodemographic characteristics of the respondents and his / her household. In addition, a major component of the survey was designed to obtain information about each respondent's preferences for a variety of transportation service attributes, including travel time, fare, frequency of departures, food service, and seating.

The sensitivity of potential travelers to changes in these service attributes was examined using an approach known as conjoint – or trade-off – analysis. Conjoint analysis has been used extensively in travel demand analysis and modeling because of its unique ability to estimate market potential for a broad range of possible services. It can also be used for market segmentation and is particularly applicable in benefit segmentation models. The market segments identified in this study were identified by performing a cluster analysis on the part-worth utilities and the importance weights for the attributes identified in the conjoint analysis. Part-worth utilities represent the perceived usefulness of, or preference associated with, various levels of an attribute (Note the use of both methods requires an understanding of multivariate analysis methods. Outside assistance from persons experienced in the use of these methods was required for this research).

The research identified five market segments for intercity rail travel.

EXHIBIT 1
SEGMENTS DEVELOPED FOR INTERCITY RAIL TRAVEL IN THE PIEDMONT CORRIDOR OF NORTH CAROLINA

The Functional Traveler (28% of market)	Employed full-time, higher income, less positive about train service concepts Travels alone, not riding the train for fun Needs / cares about fast and frequent train service Does not want first class area on the train Will accept poor food service Would use train to avoid congestion / other highway hassles
The Day Tripper (26% of market)	Male, younger, single Travels with one other person, shorter trips, returns same day Needs / cares about frequent train service Will accept / does not care about road congestion Would use train to avoid higher bus fares
The Train Lover (21% of market)	Employed higher income, larger household, very positive about train service ideas, has traveled by train previously Riding the train is the purpose Needs / cares about low fares, food service Does not separate smoking / non-smoking trains
The Leisure (Hedonic) Traveler (15% of market)	Lower income, 2-person household, zero or one car Long trips, away more nights, not for business Needs / cares about reservations, nice seats, alcohol served on board Does not want smoking prohibited Will accept / does not care about infrequent service, slow trains, highway hassles
The Family Traveler (9% of market)	Female, larger households, fewer cars Longer stay away, travel with others (especially under 12), not to visit family or friends Needs / cares about fast trains, reservations, food service, fold-down work table, phone Does not want alcohol served on board Will accept / does not care about higher fares

This research and other data supported reopening of the *Carolinian.* Marketing communications focused on the functional traveler and the day-tripper.

Additional research was conducted by NCDOT to provide data to support the operation of an additional line – the *Piedmont*. This research used past mode selection behaviors as well as product selection behaviors to segment the market and provide a profile of current *Carolinian* users and potential users of both the *Carolinian* and the *Piedmont*. Six hundred telephone interviews were completed with randomly selected "travelers" residing in the service area. "Travelers" were defined as individuals over 16 years of age who had taken at least four trips in the twelve months before the research within North Carolina between Raleigh and Charlotte. The questions were intended to achieve five goals:

- Assess awareness, use, and satisfaction with passenger rail service compared with other modes of transportation.
- Provide a profile of current *Carolinian* users and potential users of the *Carolinian* and the *Piedmont.*
- Determine the reasons individuals use or do not use trains.
- Determine what areas of service are most important to traveling consumers, and measure how well the *Carolinian* performed in these areas.
- Assess the likelihood of travelers using the *Piedmont* when it becomes available.

Analysis of the data based on stated preference for different modes and likelihood of using the two lines identified current and potential market segments. Differences and similarities in demographic characteristics and attitudes were then compared across the identified segments.

Based on the research, the department identified three primary targets: families, older people (60 years of age and above), and college students, abandoning its earlier efforts at targeting business travelers. For both families and older people, the marketing would emphasize safety, convenience, and cleanliness of the service. Ads aimed at families also would identify the child-friendly features of the train, such as the ability to get up and walk around and the usefulness of tray tables for game playing. Marketing to college students would focus almost exclusively on the bargain that train travel represents. Efforts concentrated primarily on freshman and sophomores, who are less likely to be able to afford a car. The research also identified the most effective media to reach these targets.

NCDOT also changed aspects of its operations as a result of this research. A major finding was that nonriders were not willing to use any train service unless it was clean, safe, and efficient. NCDOT implemented several initiatives, including improving the lighting in station parking areas, installing surveillance cameras controlled by local police, and putting NCDOT caretakers in stations not staffed by Amtrak employees.

The November 1996 *Newsline*, published by the Transportation Research Board, provides some insight into the success of North Carolina Department of Transportation's strategies on the Piedmont Corridor. Conventional passenger service in the corridor makes a strong showing. During FY96, *Carolinian* revenues covered 86 percent of the train's operating costs, and since the *Piedmont's* introduction in May 1995, it has scored highest in customer satisfaction on all Amtrak trains surveyed. *Carolinian* ridership increased from 147,914 in fiscal year 1994 to 168,232 in fiscal year 1996. The *Piedmont* has also been a success, with average weekday ridership increasing from an average weekday number of 58 in its first year of operation to 87 in the months from June 1996 to December 1996.

Sources: North Carolina Department of Transportation, *The Market for Rail Passenger Service Among North Carolina Consumers*, 1993.

Eric I. Pas and Joel C. Huber, "Market Segmentation Analysis of Potential Intercity Rail Travelers," *Transportation 19* (1992), pp. 177-196.

Some Cautions on Market-Defined (Post Hoc) Segmentation

The power of market-defined (post hoc) segmentation cannot be underestimated. This does not mean, however, that this is a problem-free approach.

First, and foremost, **there is an inherent risk in the use of market-defined (post hoc) segmentation**. By its very nature, you cannot know several key facts until the data has been gathered and analyzed. Notably, you do not know whether you can in fact segment the sample (or population). Other information that does not emerge until after data analysis includes the number and size of the segments, the stability of the segments, the homogeneity of the segments, and the size and complexity of classification models that may emerge from the segmentation.

At a minimum, the process of market-defined (post hoc) segmentation should begin with the development of research hypotheses. For example, persons who are concerned with the environment are more predisposed to using public transportation. In more complex studies, a model of consumer behavior may be developed. Skipping this step is myopic and will lead to segments that are no better than what would have been developed using an *a priori* approach. Even with the best planning, poorly defined hypotheses or a faulty model leading to a poor segmentation scheme always remains a possibility. You sometimes cannot know if a model works until you try it. Strategies to minimize this risk will be discussed in Chapter 3.

Second, **some studies of this nature get into serious trouble by underestimating the complexity of segmentation data**. In many instances it is very difficult to understand the specific criteria that were used to assign a respondent to a specific segment. This is particularly true when using complex multivariate models that make use of factor and/or cluster analysis. All too often, too little time is left for data analysis and interpretation and the results of this analysis. Moreover, there is frequently pressure from management to deliver the results, leading to a temptation to promise early delivery and to hasten the analysis. This has become more problematic recently with the advent of software-based programs that appear to create segments with a touch of a button. A segmentation study is one place where you should never try to rush data analysis and interpretation.

Finally, **the cost of post-hoc segmentation is often greater than that using *a priori* methods**. Sample sizes are larger and questionnaires may be more lengthy or complex. In many cases, multivariate analysis is indicated, requiring the use of a person with experience in the specific methods being considered.

This handbook focuses primarily on the use of market-defined segmentation schema. While this focus is not meant to minimize the use of a priori methods, many transit agencies have used these methods. The purpose of this handbook is to present some new ideas and to encourage transit agencies to think about market segmentation in some new and different ways. The remainder of this chapter explores in detail some of the most common bases for segmenting the market.

Physical Attribute Segmentation

Defined

Demographic, socioeconomic, and geographic segmentation bases and variables provide important information about individuals within specific markets. Segmenting markets by these physical dimensions is a logical starting point for several reasons:

- The data is relatively easy to obtain.
- It is generally less expensive than other forms of segmentation research.
- It provides a quick snapshot of a market (an understanding of market structure and potential customer segments).
- Populations can be sampled and accurately projected to represent characteristics of the entire market.
- The information gathered can be of great value for decision-making.
- The data corresponds to other available data and information for decision-making.

Common Bases for Physical Attribute Segmentation

Geographic location has long been considered useful as a basis for market segmentation studies. It has been believed that population dispersion and cultural development result in particular behavioral patterns form different segments. Geographic analysis is also one of the simplest methods for dividing markets into possible target segments. Segmenting by geography has been the primary way many transit systems have segmented markets for many years. Where people live, work, and play has a great impact on their use of public transportation.

Probably the earliest and certainly most commonly used basis variables for segmenting consumer markets today are population **demographics**. Demography is the statistical study of human populations and their vital characteristics. Socioeconomic factors, which are closely linked to demographics, are used to analyze a population in terms of economic and social classes. While technically different, the broad definition of demographics as used in market segmentation includes both demographic and socioeconomic variables. The following table illustrates the most common variables:

Demographics	Socioeconomics
Population	Education
Number of Households / Families	Occupation
Household Size / Family Size	Income
Age	Home Ownership (owner versus renter, type of dwelling, mobility / stability)
Family Life Cycle	Automobile Ownership (number and type of vehicles owned)
Marital Status	Social Class
Race	
Nationality	
Religion	

A reference for selecting appropriate demographic and socioeconomic variables for segmentation analysis is provided in an Appendix at the end of this report.

Demographic variables are most often used for *a priori* segmentation. Agencies relying on this analysis have typically begun their segmentation research by determining selected demographic characteristics of their current riders – for example, age, income, and access to an automobile. This data is then compared with data from secondary sources – for example, the U.S. Censuses of Population and Housing. Significant differences are then used as a basis for informing decisions about one or more parts of the marketing mix.

Demographic surveys may also be done *post hoc*. In this case, it becomes possible to compare the demographics of different segments in the sample – for example, riders compared with nonriders or frequent riders compared with infrequent or occasional riders. Studies of this general nature can provide considerable insight into the market and often represent the core of many agencies' market research efforts.

To maximize the value of the physical dimensions, a composite **geodemographic** model can be used for segmentation analysis. Geodemographics is defined as the description of demographics by geographic areas. The basic premise behind geodemographics is that the sum of the whole is more powerful than the individual parts – geography, demographics, and socioeconomic factors.

In consumer marketing, the unit of analysis is the zip code or block group. In transit, transit analysis zones (TAZs) are used. Geodemographic analysis can be quite sophisticated. New software and GIS mapping capabilities have greatly enhanced the value of geodemographics. One approach to geodemographic analysis uses cluster analysis – a multivariate procedure frequently employed in market segmentation research. Here, segments are identified consisting of zip codes or TAZs that have similar demographic characteristics. It is important to note that the codes within each geodemographic segment may be widely dispersed throughout the study area. They may not be contiguous and, therefore, may not represent a particular area.

Geodemographic segmentation is used extensively by transit agencies. It is an essential component for route planning. Moreover, it is a relatively inexpensive and not unreasonable alternative to benefit and/or psychographic segmentation. Given the amount and accessibility of this data, it can serve as an excellent starting point in understanding differences within a market.

Benefits

Demographics and geodemographics have been popular as a basis for segmentation over the years because:

- They are easy to measure.
- They describe what consumers *are like*, and from this, plus our own experience, we can infer something about how they might think and some of the things they are most likely to want.
- There is the belief that such variables as gender, age, marital status, and the number and age of children are strong life cycle factors associated with consumption habits.
- Data describing the entire U.S. population in terms of these characteristics are readily and cheaply obtainable from government sources (e.g., Censuses of Population and Housing) as well as from some business publications (e.g., *Sales and Marketing Management Annual Survey of Buy Power*). Studies also may be available at the local level, and in those cases where secondary data is not readily available, primary data can be obtained for a relatively low cost.
- Coverage for all major types of media is almost always available in terms of consumer demographics, making it particularly useful for marketing and advertising folks.

Limitations

Despite these advantages, demographics provide limited insight into the minds of the consumer and have generally failed to explain consumption behavior.

One should not use geodemographic data to the exclusion of other market-based data. In most cases, demographic segments tend to be defined too broadly. That is, people with the same demographics may not behave in the same manner. Moreover, demographic and geodemographic segmentation tends to place too much emphasis on income and/or other socioeconomic factors as the discriminating factors.

Moreover, demographic data does not consider the psychological or social dimensions influencing consumers and their mode choice decision. Except for specific products or services targeted at specific demographic groups – for example, a senior or youth pass – single demographic measures have generally not proven effective. This is not to say that demographic segmentation is useless. It can be very helpful in defining targets for the generic expansion of markets with low incidence of use. Transit may be a perfect example of just such an application. For example, the demographic characteristics of bus riders – younger age groups, older age groups, and lower income groups – are sharply different from those of non-bus riders. Accordingly, it would probably be a mistake to mount an advertising campaign targeted only to upper income people, at least without significant changes to the product / service offering. However, some demographic factors are less likely to be subjected to environmental influences.

An Application of Geodemographic Segmentation

In recent years, with the advent of Geographic Information System (GIS) mapping technology, geodemographic segmentation has proven particularly useful for transit. GIS technology allows for easy manipulation and visualization of census data; spatial trends can be detected. The following examples illustrate the power of geodemographic segmentation for transit planning.

In order to assess the relative demand for transit services among all neighborhoods in the City of St. Louis, several demographic characteristics that are frequently associated with transit needs were examined. Analysis was conducted using 1990 Census data.

Census data has long been an important resource used by public transit providers, consultants, and others. The 1990 Census provided a reliable set of demographic characteristics that could be easily manipulated by transportation professionals as model inputs, for forecasts, and for various other transportation applications. Hundreds of demographic characteristics, for both households and persons, are available at various geographic units, from units as large as states and counties to units as small as census blocks. Furthermore, the Census Bureau prepared a special set of tabulations of particular interest to transportation professionals. The data provided by the 1990 Census would be difficult and expensive for transit providers to duplicate.

The City of St. Louis considered six demographic variables commonly associated with transit. These variables included:

- Population;
- Seniors, defined as residents 65 years of age or older;

- Annual household income below $15,000;
- Households with no automobiles;
- Unemployed persons; and
- Persons with mobility limitations.

A ranking was given to each region in St. Louis for each variable. All rankings were subsequently combined so that an overall representation of transit need could be developed.

Census information is reported at various geographic levels including states, counties, municipalities, census tracts, census block groups, and census blocks. Since *census blocks* are so small, much data is not reported at this level due to issues of confidentiality. Data at the census block level is effectively limited to general population statistics. St. Louis used data collected at the *census block group* level, so that small areas could be evaluated.

To pinpoint areas with relatively high transit dependence (and subsequently those areas most likely to support transit services), comparable "ranges" were defined on each demographic map. Ranges were created so that all of the 588 block groups in St. Louis were divided into five equal quintiles. Since the 588 block groups composed "ranges" made up of five equal quintiles, two ranges included 117 block groups and three ranges included 118 block groups ((117 x 2) + (118 x 3) = 588). By separating the block groups into equal quintiles, it was easy to locate those areas of St. Louis exhibiting relative transit dependence. (A sample demographic map is presented on the following page.)

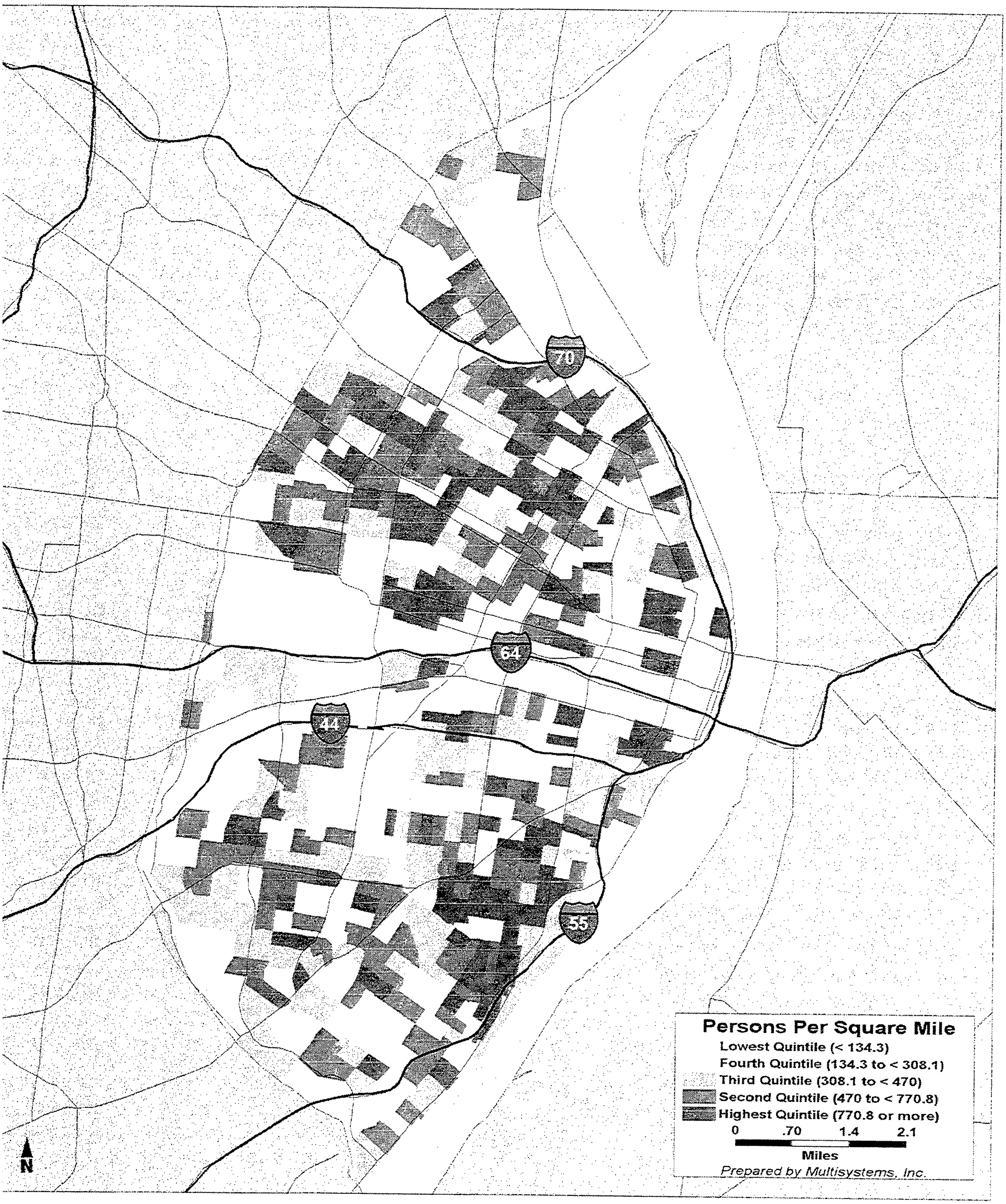
Next, a composite indicator was developed to summarize the overall level of transit dependence in St. Louis. A score of "1" through "5" was assigned to each of the block groups for each of the six demographic variables considered, where "5" showed the highest level of transit need. Each score corresponded to the range within which each block group fell on the individual maps. Using the distribution of households earning less than $15,000 per year as an example, the block groups were coded as follows:

Score	Households Per Square Mile
1	Less than 452 households per square mile
2	At least 452, but less than 1,000 households per square mile
3	At least 1,000, but less than 1,555 households per square mile
4	At least 1,555 but less than 2,330 households per square mile
5	2,330 or more households per square mile

This procedure was followed for all six indicators. After the other five indicators were ranked in a similar way, the six scores for each block group were summed. The composite score for each block group ranged from 6 (for those block groups that ranked in the lowest quintile in each of the five characteristics) to a high of 30 (for those block groups that ranked in the highest quintile in each characteristic).

Finally, a composite map was created, summarizing overall transit need in St. Louis. The areas exhibiting the highest need included approximately 31 percent of the block groups (with composite scores between 23 and 30). Block groups with the lowest need included the 30 percent with the lowest score (between 6 and 14); all areas with scores between 15 and 22 were considered to have moderate need. The composite map is presented on page 30, and indicates a comparatively high level of transit dependency scattered throughout the northwest section of St. Louis, and a noticeable cluster in the southeastern section of the city.

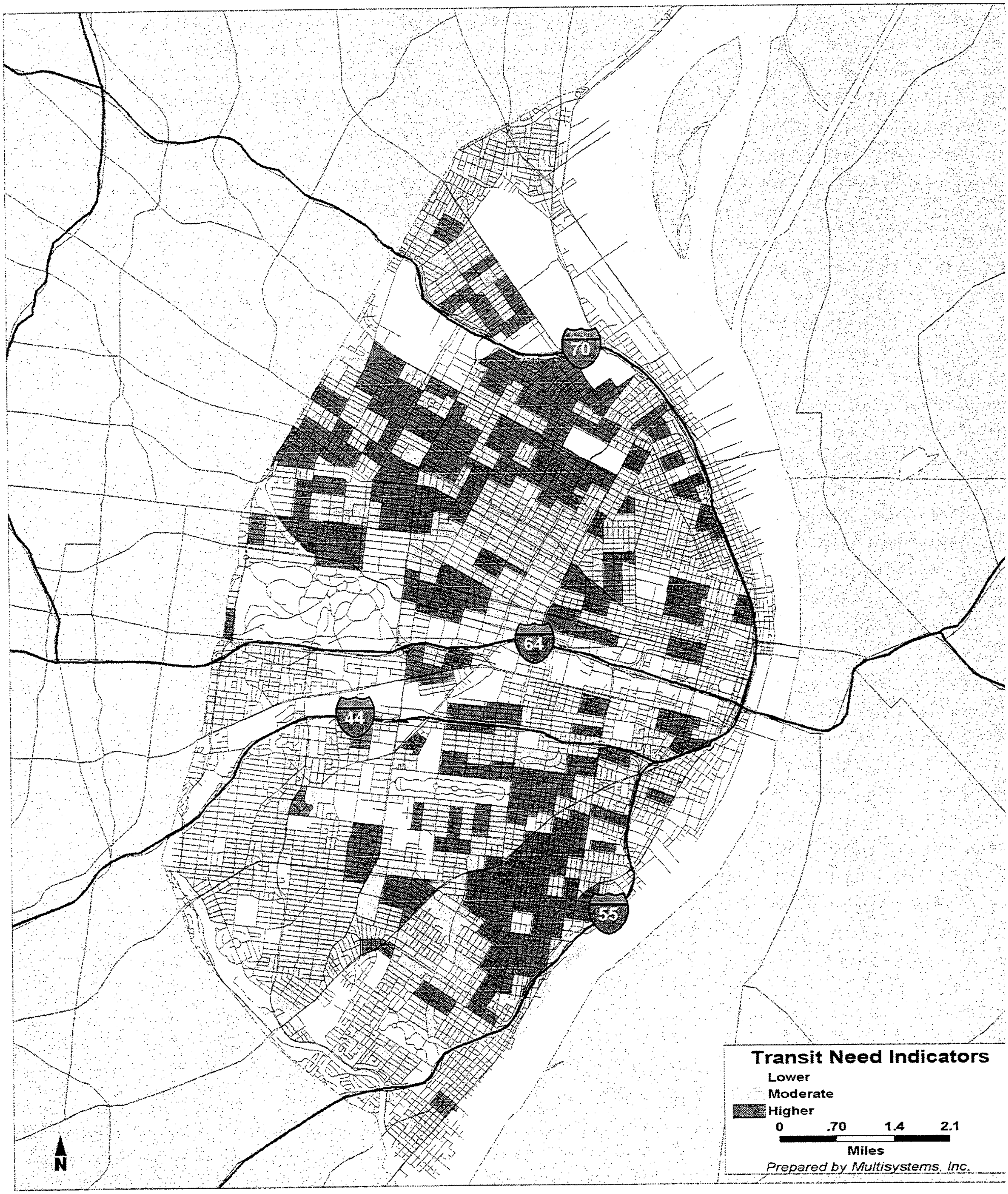
Source: *Use of Census Data to Pinpoint Areas of Transit Need,* prepared for TCRP Project B-9 by Multisystems, Inc.



Density of Persons With Mobility Limitations
In the City of St. Louis, By 1990 Census Block Groups

70
64
44
55
N
Persons Per Square Mile
Lowest Quintile (< 134.3)
Fourth Quintile (134.3 to < 308.1)
Third Quintile (308.1 to < 470)
Second Quintile (470 to < 770.8)
Highest Quintile (770.8 or more)
0
.70
1.4
2.1
Miles
Prepared by Multisystems, Inc.

Summary of Transit Need in the City of St. Louis


70
64
44
55
N
Transit Need Indicators
Lower
Moderate
Higher
0
.70
1.4
2.1
Miles

Prepared by Multisystems, Inc.

In addition to determining important concentrations of transit dependent persons, transit planners are often interested in determining trip-making characteristics (such as trips to work) among residents living in transit-dependent neighborhoods. The best source of information describing work trip flows is found in the 1990 Census data.

The 1990 Census included a set of special tabulations of interest to transportation planners. These special tabulations, the 1990 Census Transportation Planning Package (CTPP), were based on a 17 percent sample of all work trips and is composed of three parts. The first component presents information at the residential end. The second component presents information at the work location. The voluminous third component ties together information about where people live and information about where people work. The CTPP is also divided into 2 "elements", the "statewide element" and the "urban element". The statewide element is more general, and contains travel information down to a geographic unit as small as Minor Civil Divisions (MCDs). The urban element contains 1990 journey-to-work information down to a much smaller geographic unit, by census tract or Transportation Analysis Zone (TAZ).

Information from the 1990 CTPP was used to identify dominant work trip flows among employees living in different parts of St. Louis. This data was available by TAZ. St. Louis contained 225 Transit Analysis Zones (TAZ) in 1990.

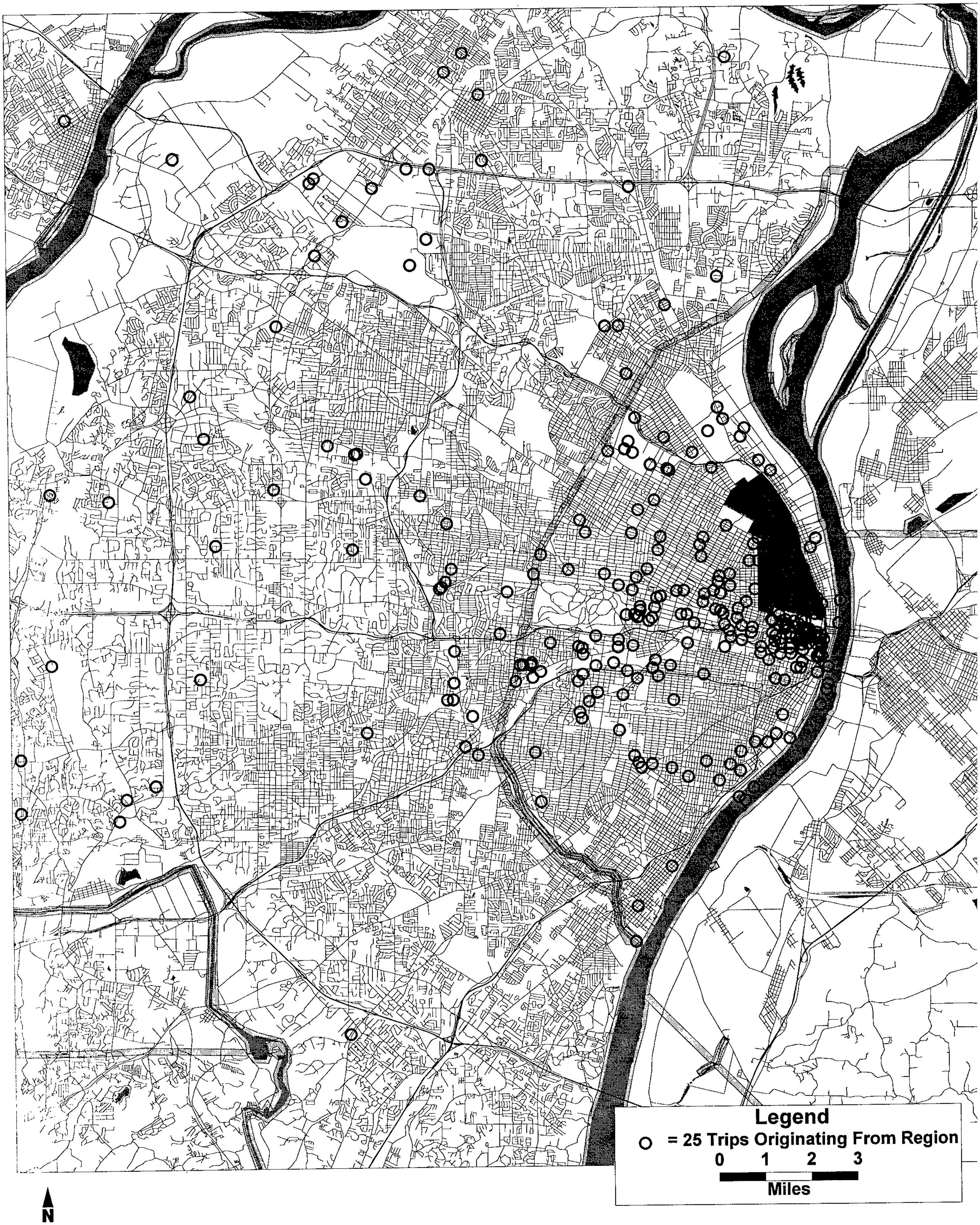
Examining major regional flows at the TAZ level is a monumental task because of the large number of TAZs involved. Therefore, to facilitate the analysis of trip patterns throughout the region, all 225 TAZs in St. Louis were initially aggregated to a less detailed neighborhood level. Aggregating the TAZ boundaries and information created fourteen neighborhoods. TransCAD GIS was used to display work trip flows from each neighborhood (TAZ aggregation) to every destination (TAZ) in the St. Louis metropolitan area. The journey-to-work distribution among residents of one St. Louis neighborhood is presented on the following page. Residential neighborhoods ("regions") are indicated by shaded polygons; work trip destinations for neighborhood residents appear as circles.

Since the number of trips originating in each neighborhood differ significantly, and to more easily observe travel trends among residents of each neighborhood, travel data was manipulated in TransCAD to equalize the number of work trip destinations (circles) that appear on each map. The number of trips represented by each circle was calculated so that each map contained a total of 300 circles. The resulting maps allow transportation planners and others to visually detect work trip travel trends among residents of each neighborhood in St. Louis. As can be seen in the following map, the work destination for employees living in neighborhoods just north of the central business district (CBD) is heavily concentrated in the downtown area.

Information collected from the census and portrayed in maps is often the first step in service planning. Transit needs become evident, and gaps in service may become easier to detect. Census data, as portrayed geographically, help transit planners consider modifications in public transportation routes which would allow for improved work opportunities among residents of transit dependent neighborhoods.

Source: *Use of CTPP Data to Illustrate Work-Trip Flows*, prepared for TCRP Project B-9 by Multisystems, Inc.

1990 Work Trip Destinations From All Origins in Highlighted Region


Legend
○ = 25 Trips Originating From Region
0 1 2 3
Miles
N

Sources of Demographic and Geodemographic Data

Good geodemographic data does not have to be expensive. There are some excellent secondary sources of geodemographic data that are available at little or no charge through public or university libraries. There are dozens of quality demographic references available at most public libraries, some of which are listed in the table below. Keep your eye on the Internet. Many of these sources are now becoming available on-line as well.

Library demographics are both underused and underestimated as planning tools. They represent one of the best avenues for marketing information at little or no cost. Many transit agencies rely almost totally on census data, ignoring the more "marketing-oriented" publications that are available, believing they are not applicable to the market they are serving. The value of these publications in understanding changes and trends in the marketplace cannot be underestimated.

	% of Libraries Where Available
County and City Data Book	96
U.S. Statistical Abstract	96
Sales and Marketing Management's Surveys / Special Issues	93
State and Metropolitan Area Handbook	93
Census of Population and Housing	89
Editor and Publisher Market Guide	89
Rand McNally Commercial Atlas and Marketing Guide	85
American Demographics	85
CACI's Sourcebooks	74
Statistical Reference Index	74
Statistical Handbook Series	59
State Statistical Abstracts	56
Data from Local / County / State Agencies	48
Donnelley's Market Profile Analysis	37
SRDS' Lifestyle Market Analyst	22
REZIDE: National Encyclopedia of Residential ZIPCode Demography	15
Zip Code Sale Information Guide	11

The Census represents one of the most important "free" sources of this information. As of 1990, this data is available on CD-ROM to allow for easier manipulation and analysis. Following is a list of the population items (appears on all forms) and sample components (collected from approximately one in six housing units) from the 1990 Census of Population and Housing.

SUBJECT ITEMS INCLUDED IN THE 1990 CENSUS OF POPULATION AND HOUSING

100 Percent Components

Population Items

- Household relationship
- Sex
- Race
- Age
- Marital status
- Hispanic origin

Housing Items

- Number of units in structure
- Number of rooms in unit
- Tenure (owned or rented)
- Value of home or monthly rent
- Congregate housing
- Vacancy characteristics

Sample Components

Social Characteristics

- Place of birth, citizenship
- Education
- Ancestry
- Migration – 1985 residence
- Language spoken at home
- Veteran status
- Disability
- Fertility

Economic Characteristics

- Labor force
- Place of work and journey to work
- Year last worked
- Occupation, industry, and class of worker
- Work experience in 1989
- Income in 1989

Housing Items

- Years moved into residence
- Number of bedrooms
- Plumbing & kitchen facilities
- Telephones in unit
- Vehicles available
- Heating fuel
- Source of water and method of sewage disposal
- Year structure built
- Condominium status
- Farm residence
- Shelter costs with utilities

The Census Bureau has added an innovative geodemographic mapping component to its offerings. Topologically Integrated Geographic Encoding and Referencing (TIGER) provides computer-readable mapping and a geographic database for the entire United States. Plotting geographic coordinates, TIGER serves as the underlay for address / area data (demographic, economic, and so on) provided by users that result in high-quality, digital maps for a variety of geographic areas. There are many marketing and geographic information systems (GIS) applications for the TIGER system. Currently, the price of TIGER files varies from as little as $100 for a single CD (there are 44 disks for the United States) to $38,000 for the whole country on computer tape. Many companies, including those working specifically in the transit industry, provide specialized services that use TIGER. For further information on the TIGER resource list, contact the Bureau of the Census by phone at (301) 736-4100, by modem at (301) 763-7554, or on the Internet at www.census.gov.

If your agency is considering the use of a GIS system, ask yourself the following questions.

COMPUTER MAPPING: KEY QUESTIONS

- ✓ What type of system is appropriate? PC-based, mini, or mainframe?
- ✓ What type of software is provided?
- ✓ How good is the quality of finished maps?
- ✓ Are zooming capabilities provided?
- ✓ Can you add your own data to the system?
- ✓ How flexible is the output?
- ✓ How easy is the system to use?
- ✓ Can you "test drive" the system?
- ✓ How much support does the vendor provide?
- ✓ How much does it cost?

Source: Martha Farnsworth Riche, "Computer Mapping Takes Center Stage," *American Demographics*, June 1986, p. 30.

Researchers should not limit themselves to libraries in the search for secondary demographic data. There are other good sources for low- and no-cost geodemographic data. These include government agencies (federal, state, and local branches), universities, and other local sources.

Many syndicated sources exist that provide the marketer with demographics about specific markets. In recent years, this data has become available in electronic format, increasing its accessibility and usefulness.

Several syndicated sources may be particularly useful for transit marketers and service planners. The most prominent offers are called PRIZM™ (Claritas), ClusterPlus™ (Donnelley), and ACORN™ (CACI, Inc.), with each having some advantages over the others. Interestingly, all three services report approximately the same number of segments, about 50.

These sources generally rely on census data to group neighborhoods throughout the United States into different demographic / life-style clusters. Several are now available as computer databases that can be used on a desktop computer. In some cases, mapping technology is also available.

ClusterPlus™ (Donnelley) classifies all households into 47 different clusters. The emphasis is on demographics (age, ethnicity, income, mobility, education, occupation, and nature of housing) rather than psychographics. ClusterPlus™ provides the current year's estimates of various demographics along with five-year projections. The marketer should consider markets not only as they presently exist, but also as they are likely to be in later years. The following table illustrates a few of the ClusterPlus™ segments.

EXHIBIT 2 SAMPLE CLUSTERPLUS™ SEGMENTS	
1	Highest socioeconomic status, highest income, prime real estate areas, highest educational level, professionally employed, low mobility, homeowners, children in private schools.
5	High income, high home values, high education level, professionally employed, low mobility, homeowners, homes built in 1950's and 1960s.
10	High education level, average income, professionally employed, younger, mobile, apartment dwellers, above-average rents.
15	Older, very low mobility, fewer children, above-average income and education, white-collar workers, older housing, urban areas.
20	Areas with high proportion of group-quarters population, college dormitories, homes for the aged, mental hospitals and prisons, other institutions.
25	Younger, mobile, fewer children, below-average income, average education, apartment dwellers.
30	Low income, lowest educational level, families with one worker, farms, rural areas.
35	Older housing, low income, average education, younger, mobile, fewer children, apartment dwellers, small towns.
40	Older, very low income, low education levels, one-person households, retirees, few children, older homes and apartments
47	Urban blacks, very low income, low education level, very high unemployment, female householders with children, older housing.

Source: *Demographics On-Call.* Stamford, Conn.: Donnelley Marketing Information Services, 1987.

PRIZM™ (Potential Rating Index by ZIP markets), from Claritas classifies census blocks into one of 62 basic neighborhood types based on social rank (income, employment, education, etc.), household composition (age, gender, family type, dependency ratios, etc.), mobility (length of residency by owner or renter, auto ownership, etc.), ethnicity (race, foreign birth, ancestry, language, etc.), urbanization (population and housing density), and housing (owner / renter status, home values, number of stores, etc.). All of the 62 clusters are grouped into 15 broader social groups based on their affluence and density of the neighborhood in which they reside. PRIZM also ties in some major behavioral aspects – consumer purchasing, magazine subscriptions, and credit card information. Moreover, it integrates media audience data for television, radio, and print media, meaning that the PRIZM data can also be used to select media that best reaches a particular market. PRIZM has not integrated any data such as the journey-to-work data that could prove useful for transit planning. As such, PRIZM is primarily a marketing tool.

The following table shows the names and descriptions of a few of the PRIZM clusters. The National Symphony used the PRIZM clusters and found that far more "Money & Brains" people (cosmopolitan singles and couples) than "Furs & Station Wagons" (affluent suburbans) attended. The National Symphony began to promote in neighborhoods of "Bohemiam Mixers" (childless couples), and in some areas sales jumped 25 percent.[8]

EXHIBIT 3 SAMPLE PRIZM™ CLUSTERS	
S1 – Elite Suburbs 03 – Executive Suites *Upscale White-Collar Couples*	Cluster 3 describes yesterday's "Young Influentials," who are en-route to becoming tomorrow's "Winner's Circle." Many have married and moved into condos or starter homes. Unique for S1, this cluster is above average in pre-school kids. Although they rank well below "Winner's Circle" in affluence, they are well-educated, ambitious, and competent; they're just ten years younger. Affluent Age Groups: 25 – 34, 35 – 44 Dominant White, High Asian

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[8] Michael J. Weiss. The Clustering of America. New York: Harper & Row, 1988.

EXHIBIT 3
SAMPLE PRIZM™ CLUSTERS

U1 – Urban Uptown 09 – American Dreams *Established Urban Immigrant Families*	Cluster 9 typifies the "American Dream." Immigrants and descendants of multi-ancestries populate these multi-racial, multi-lingual neighborhoods. Cluster 9 tends to have big families, which is unique to group U1. Multiple incomes from trades and public service have raised them to the second affluence level. Upper Middle Age Groups: 35 – 44, 45 – 54 Ethnically Diverse
C1 – 2nd City Society 11 – Second City Elite *Upscale Executive Families*	Cluster 11 describes the "movers and shakers" of our second cities that are found coast to coast, with its typical example in the wealthy enclaves of Huntsville, Alabama. Primarily married with teenage children, they give first attention to their families, homes, and clubs, then steal away to play in Europe. Affluent Age Groups: 45 – 54, 55 - 64 Dominant White
T1 – Landed Gentry 15 – God's Country *Executive Exurban Families*	Many educated, upscale, married executives and professionals are raising their large families in the remote exurbs of major metros, the outskirts of second cities, and scenic towns. Multiple incomes support their affluence. Life centers around family and outdoor activities. This is cluster 15, in the second affluence decile. Affluent Age Groups: 35 – 44, 45 – 54 Dominant White
S2 – The Affluentials 21 – Suburban Sprawl *Young Midscale Suburban Couples and Singles*	Multi-racial, multi-lingual neighborhoods are typically found in the centers of major metros. Cluster 21 is the exception, showing above average concentrations of native and foreign-born ethnics who have used education to become executives, administrators, and technicians. They have moved to the suburbs and the fourth affluence decile. Middle Age Groups: Under 24, 35 – 44 Ethnically Diverse
S3 – Inner Suburbs 24 – New Beginnings *Young Mobile City Singles*	Concentrated in the boomtowns of the Southeast, Southwest, and Pacific coast, cluster 24 is a magnet for fresh starts. Populated by well-educated youths, many are minorities. Some are divorced, while many others are solo parents. The majority lives in multi-unit rentals, and work in a variety of low-level, white-collar jobs. Middle Age Groups: Under 24, 25 - 34 Ethnically Diverse
U2 – Urban Midscale 30 – Mid-City Mix *African-American Singles & Families*	Cluster 30 is in the seventh affluence decile, geographically centered in the Northeast and Great Lakes regions. Similar to all U2's, cluster 30 shows above-average ethnic diversity and a mix of white- and blue-collar employment. These rowhouse neighborhoods on the urban fringe are two-thirds black and have a high incidence of college enrollment. Middle Age Groups: Under 24, 25 – 34, 35 – 44 Dominant Black
C2 – 2nd City Centers 34 – Starter Families *Young Middle-Class Families*	Bucking recent trends, "Starter Families" opted for early marriage and parenthood. Here we see a higher index for blue-collar jobs, large families, and solo parents with young children. Many are living in natural beauty with a skew to the Pacific coast, the Rockies, and the Northwestern Canadian borderlands. Middle Age Groups: Under 24, 25 – 34 Mixed Ethnicity, High Hispanic
T2 – Exurban Blues 38 – Middle America *Midscale Families in Midsize Towns*	Sitting atop the sixth affluence decile of the U.S. median income, cluster 38 is aptly named. These are family neighborhoods with a high index for married couples with children. They are busy with kids and dogs, and enjoy fast food, sports, fishing, camping, and watching TV. In approximate balance with the U.S. population, they are found coast to coast. Middle Age Groups: 25 – 34, 35 – 44 Dominant White
R1 – Country Families 42 – New Eco-topia *Rural White / Blue-Collar / Farm Families*	Found in the Northern Pacific, the Rockies, and northern New England, cluster 42 is the only R1 cluster with above-average college educations. "New Eco-topia" has an even mix of white / blue-collar jobs. A high index for personal computers reflects several new, high-tech industries in these pristine areas. Middle Age Groups: All age groups 35+ Dominant White

EXHIBIT 3
SAMPLE PRIZM™ CLUSTERS

U3 – Urban Cores 45 – Single City Blues *Ethnically-Mixed Urban Singles*	Cluster 45 is found in most Eastern megacities, in the new West, and is third in the most singles in America. Often found near urban universities, cluster 45 hosts a fair number of students. With very few children, it's a mixture of races, transients, and night trades, and is best described as a "poor man's Bohemia." Lower Middle Age Groups: Under 24, 25 – 34, 65+ Mixed, High Asian
C3 – 2nd City Blues 49 – Hometown Retired *Low-Income, Older Singles & Couples*	Except for some hot spots in the West, cluster 49 lies mostly in the Appalachias and central Florida. It ranks third in singles, second in ages over 65 and first in retirement. These folks take bus tours, collect stamps, play cards and chess. Lower Middle Age Groups: 55 – 64, 65+ Dominant White
T3 – Working Towns 54 – Norma Rae-ville *Young Families, Bi-Racial Mill Towns*	Cluster 54 is geographically centered in the South, in the Mississippi delta, and in the Gulf coast, and Atlantic states, which have become the centers for our non-durable industries, such as clothing and home furnishings. With minimal educations, a black / white population mix, and unskilled labor, cluster 54 falls in the ninth affluence decile. Poor Age Groups: Under 24, 65+ Dominant Black
R2 – Heartlanders 57 – Grain Belt *Farm Owners & Tenants*	Feeding America and sometimes the world, cluster 57 is our breadbasket. Centered in the Great Plains and South Central regions, this cluster shows a high index of Latino migrant workers. Life here is tied to the land, and ruled by the weather. Mostly self-sufficient, family- and home-centered, these families are poor only in money. Lower Middle Age Groups: 65+, 55 – 64 Dominant White, Some Hispanic
R3 – Rustic Living 59 – Rustic Elders *Low-Income, Older, Rural Couples*	Cluster 59 is the third most elderly cluster in America, with the lowest incidence of children in group R3. It covers the nation, but is concentrated in the Great Plains and along the West Coast. Although the lifestyle is pure country, the high indices for country clubs, powerboats, sailboats, volleyball, and health walks are surprising. Lower Middle Age Groups: 65+, 55 – 64 Dominant White

Source: *PRIZM, Summary Lifestyle Descriptions, Cluster Narratives*, Various Promotional Materials, Claritas, Inc. 1996.

There are other similar systems available. Vision (National Decision Systems, Incinitas, CA) sets up its categories with an emphasis on buying patterns, media preferences, and financial services. Like the others, they have 50 unique segments. CACI (CACI Market Analysis, Fairfax, VA) offers a combination of demographics and buying power for every county and zip code. They have 44 consumer types in their analysis. Equifax National Decision Systems (San Diego, CA) offers the ability to define a geographic area of any size and shape anywhere in the United States and easily obtain accurate, up-to-date information about the people, households, and businesses within that specific area. Data regarding population and household demographics, socioeconomics, housing characteristics, lifestyle segments, consumer purchase behavior, media habits, and consumer attitudes is available. Some of these systems are available as computerized databases and may cost as little as $15,000.

It is not clear how applicable the actual use of these services would be for transit. Typically, the analysis is done at the national level and may be hard to apply reliably to a specific geographic level – notably to the level of a transit analysis zone (TAZ). However, keeping up to date on these services and the changes in their segments can provide good insight into changes in the demographic and other characteristics of the market at a national level that can be used as input into what is happening at the local level. Much of this information is available over the Internet by visiting these companies' home pages. Moreover, many advertising agencies have access to these services. If your agency works with an advertising agency, be sure to ask what data they might have available.

Care must be taken, however, when using any published or purchased source of demographic or geodemographic information. Use the following checklist to assess the relevance and reliability of this data.

EXHIBIT 4

USING PUBLISHED OR PURCHASED SOURCES OF DEMOGRAPHICS / GEODEMOGRAPHICS

✓ What is the source of the demographic data? How reliable is the source?

✓ What variables are included? Are they appropriate for your needs?

✓ How current is the information?

✓ How accurate is the information?

✓ Are forecasts included? How are they derived?

✓ Is assistance in specifying the appropriate variables available?

✓ Is assistance in understanding and implementing the findings available?

✓ How is the information presented (reports, tables, maps, graphics, or other)?

✓ Is the output flexible – available in formats other than paper reports (e.g., CD-ROM, computer tapes, floppy diskettes, and microfiche)?

✓ How frequently will updates be needed? How frequently are updates available?

✓ How practical is the information?

✓ How much will it cost? (Be sure to consider external and internal costs.)

Product Usage

Definition

Often the most useful place to start product-based segmentation efforts is with usage rates. Usage rates are one of the simplest basis variables used for segmentation efforts. For example, some companies just dichotomize the consumption distribution into heavy versus light users at the median point. More often, three categories are used: heavy, medium, and light users.

While simplistic, it is often very useful in those product / service categories where some users consume far more than others. For example, about 20 percent of U.S. beer drinkers consume about 70 percent of the total, 15 percent of the passengers on one airline at one time account for 65 percent of all travel on that airline, and 2 percent of the accounts in one large bank trust department hold about 50 percent of all assets under trust.

Product usage segmentation is particularly applicable to transit. This is frequently the next step taken once agencies have exhausted the possibilities of segmenting by demographics and/or geodemographics. In the transit industry, segmenting based on product usage is synonymous with segmenting based on ridership – notably frequency of ridership. Like the products and services described above, the "80-20" principle may apply in transit – that is, 20 percent of the riders account for 80 percent of the ridership.

To analyze transit markets based on ridership, it is first necessary to classify riders and nonriders into specific categories. Sometimes agencies know from previous research the distribution of riding frequencies for its customers so they can use usage rates as an a priori basis variable – as a banner in cross-tabulations. For example, transit may define frequent riders as those who ride the bus five or more days a week.

However, simply relying on an intuitive or "gut-level" cut of the data may mask real differences and create a group of riders instead of a real segment of heavy users or frequent riders. It would be better to segment on a post hoc basis, letting differences in attitudes, lifestyle, and other characteristics determine the differences between a "frequent," "infrequent," "every once in a while," and "non" rider. Once the post hoc usage segments are formed, it becomes easy to cross-tabulate demographics and other survey responses against them.

Applications of Product Usage Segmentation

A cooperative effort between the Regional Transportation Authority (RTA), Chicago Transit Authority (CTA), Metra, and Pace resulted in a comprehensive, regionwide attempt to measure the region's transit users' and nonusers' awareness of and attitudes toward travel and public transportation in northeastern Illinois. The goals of this study were to:

- Determine residents' awareness of and attitudes toward public transportation in general, and the services provided by CTA, Metra, and Pace in particular.
- Identify perceptions of transit's role and current value to the region.
- Identify residents' travel behavior and use of CTA, Metra, and/or Pace.
- Identify key factors that determine residents' travel mode choice.
- Determine why former transit users and nonusers do not currently ride transit and why occasional riders do not ride more frequently.

Results of this research were used by the RTA and the Service Boards to segment the region's travel market based on travelers' stated behavior and attitudes. By identifying unique market segments, the agencies can develop targeted planning and market strategies to retain the existing ridership base and to attract new riders.

A total of 2,176 riders and nonriders were interviewed for this research effort. Respondents residing in the RTA service territory were carefully questioned about their current and past ridership on CTA, Metra, and/or Pace.

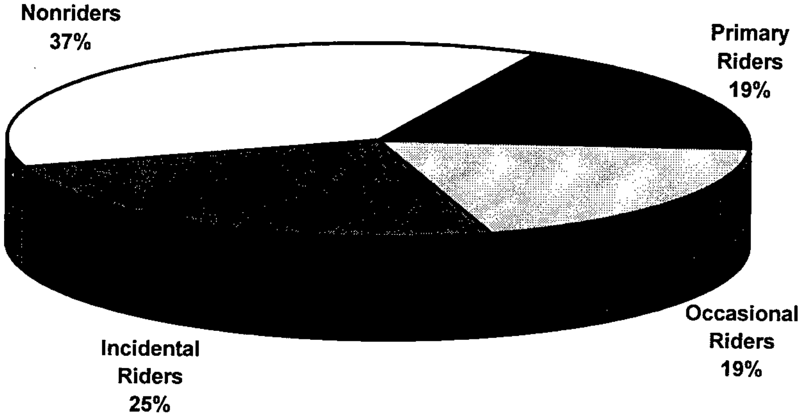
Current riders were predefined as individuals, aged sixteen or older, who have ridden CTA, Metra, and/or Pace within the past year. Among current riders, three rider segments were identified based on frequency of riding.

- **Primary Riders** – individuals who had ridden any system five or more times monthly. Note: Due to the complexity of the RTA's transportation system, Primary Riders could have ridden more than one system frequently – that is, five or more times monthly. Moreover, they could have been Occasional or Incidental Riders of another system. Finally, they could have been Nonriders of one or more systems.
- **Occasional Riders** – individuals who had ridden at least one transit system one to four times monthly. Occasional Riders could have been Occasional Riders or Nonriders of other systems. They were not Primary Riders of any system.
- **Incidental Riders** – individuals who had not ridden any of the systems within the past month. However, they had used transit at least once in the past year. They were not Occasional Riders of any system.

Nonriders were predefined as individuals, sixteen or older, who have not ridden public transit within the past year. Nonriders were segmented into two groups based on past behavior:

- **Former Riders** – individuals who had not ridden any system within the past year but had ridden one system at some point in the past five years. Former Riders were further divided based on the frequency with which they had ridden in the past.
- **Always Nonriders** – individuals who had not ridden public transportation in the past five years or had never ridden public transportation.

The following figure illustrates the relative size of these segments.



Some key findings illustrate the usefulness of this segmentation schema for marketing and planning.

- Primary and Occasional Riders represent a significant proportion of the residents of RTA's service territory. More than one out of three (38%) residents in the zip codes included in the RTA's service territory had taken at least one one-way ride on the CTA, Metra, and/or Pace in the month before the survey. Moreover, there was an equal number of Primary Riders – those riding at least five times in the past month – and Occasional Riders – those riding between one and four times in the past month.

This would suggest two important strategies for RTA and its Service Boards: 1) to retain Current Riders, and 2) to increase frequency of riding, notably among Occasional Riders. Achievement of these strategies is likely to have a significant impact on ridership in the region as a whole.

- One out of four (25%) area residents is an Incidental Rider. That is, they had ridden public transportation at least once in the past year, but they had not ridden in the past month.
  - This represents an important segment for ridership growth. This segment is more familiar with and has more positive views toward public transportation than do those that have not ridden. Efforts should be made to increase frequency of riding within this segment. Even small, incremental gains can have a significant impact on overall ridership.
- More than one out of three (36%) respondents are Nonriders; that is, they had not used public transportation at all in the past year. Of these, nearly half (47%) had ridden in the past one to five years and were thus considered Former Riders. Only one out of five (20%) area residents had never ridden public transportation or had not ridden in the past five years. That is, they are Always Nonriders.
  - Former Riders are an important group as they represent people who have had some experience riding public transportation in the region and may have some level of comfort with riding. If past experience has been positive, it should be easier to regain ridership among this segment rather than attracting those who have never ridden.
  - Always Nonriders are likely to be the most difficult market to attract. Given the size of all other segments of riders and nonriders, targeting this market should be considered a lower priority.

Source: *1996 RTA Transit Rider / Nonrider Survey*, Chicago, IL, December 1996.

There are other ways to segment the market based on product usage. Patterns in the use of a product or service can also provide interesting insights into customer behavior and, therefore, can be used as post hoc basis variables. For example, segments could be identified based on the purposes – both primary and secondary – of their transit trips. Or they can be segmented based on mode of travel. Usage pattern segments of this kind not only show where and how to target promotion efforts, they also help dispel management's myth that riders ride primarily for one purpose.

Seattle has a long history of using market segmentation techniques to guide service planning and marketing programs. In a major segmentation of King County riders and nonriders completed in 1986, residents were classified as commuters and noncommuters, and then further divided according to their typical mode choice. Commuters were defined as people who work outside the home or attend school three days or more per week. Three modes were defined: single occupancy vehicle (SOV), carpool or vanpool (two persons or more), or bus. Commuters were classified according to their typical mode for work trips. Noncommuters were classified by how they traveled for non-food shopping and personal errands. Commuters using four modes were investigated in more detail: SOV, carpool / vanpool, bus, and a combination modes.

- **Single-Occupancy Vehicle Commuters (53%).** About two-thirds of SOV commuters were in the 25 to 44 age range, with an average age of 37. Just under half were married (45%) and had only one household member employed outside the home (44%). About 72 percent of surveyed households had more than one vehicle available and 33 percent had three or more. Half of SOV commuters had college degrees and half reported household incomes above $35,000 per year.

- **Carpool / Vanpool Commuters (16%).** Carpool or vanpool commuters were more likely than SOV commuters to come from households with two or more persons (90% versus 74%) and to have more than one member employed outside the household (67% versus 54%). Most carpool / vanpool commuters knew each other outside their shared mode. More than half (52%) commuted with members of the same household and 44 percent traveled with coworkers. In fact, many of those commuters who traveled with members of their family did not consider themselves to be carpooling.

- **Bus Commuters (20%).** Most bus commuters traveled on a local bus (74%), with 37 percent using an express bus, and 4 percent on a subscription bus. About 25 percent of bus commuters did not have a valid driver's license, 19 percent did not have a car available to their household, and 39 percent had only one car. One-third of bus commuters had household incomes over $35,000 per year and 40 percent attended college.

- **Multiple Modes (3%).** Among commuters who typically used more than one mode, half used SOVs, half used carpools, and 71 percent rode the bus. These commuters might drive to a park-and-ride lot before boarding a bus or drop off a family member at work or school before driving to work. Multiple mode commuters were more likely than SOV or bus-only commuters to have a spouse employed outside the home (85%) and their rates of auto ownership were between those reported by SOV and bus users.

Source: *1986 – 1989 Transportation Market Segmentation Study. King County Summary. Telephone Surveys and Data Summaries.* Prepared for Metro, January 1990.

Advantages of Product Usage Segmentation

Segmenting markets based on product usage provides five major benefits:

- Like demographic segmentation, this is a relatively simple methodology to use. Risks and costs can be relatively low.
- It is a useful dimension for understanding transit markets based on past ridership behavior.
- It can be used to identify strategies to retain frequent riders who are generally transit-dependent and often stop riding when other modes become available.
- It can be used to identify strategies to increase consumption among light and medium users in highly competitive markets.
- By providing additional benefits or focusing on neglected market segments, it is possible to convert nonriders to riders.
- Unlike psychographic and benefit segmentation, segmenting based on product usage is generally easy to implement and requires less complex analysis. It is also less expensive depending on the incidence of riders in the general population.

Limitations of Product Usage Segmentation

There are, however, some shortcomings associated with product usage segmentation that the marketer and planner should be aware of.

- **Product usage segments are often difficult to explain through traditional demographics only**. In many markets, additional bases may need to be employed. Therefore, it is frequently used in conjunction with psychographic or benefit segmentation.
- **There are inherent problems associated with targeting the heavy user – or frequent rider – segment**. These include the fact that all frequent riders are not riders for the same reasons. Since these riders may have different needs, further segmentation within the frequent rider category is usually advisable. Moreover, frequent riders are not necessarily loyal riders. They often have little allegiance to transit and will switch as soon as alternative modes become available or if service is changed.
- **There are some definitional problems in product usage analysis**. For instance, how do you distinguish a frequent, infrequent, and very infrequent rider? These and other questions must be answered by the marketing analyst. As noted earlier, all too often these definitions are determined on an *a priori* basis. Care must be taken to insure that preconceived notions or inherent organizational biases do not lead one into conducting research that provides little, if any, new information. A more effective strategy for product usage research is to use a *post hoc* approach. That is, research is conducted and product usage segments are then defined on the basis of the data gathered. This, however, frequently requires additional data as noted above.

Product-Related Attitudes

Definition

Customers and noncustomers' attitudes toward a specific product or service category is another frequently used type of basis variable. This is especially useful for developing advertising and promotion programs, because it enables advertising agencies to understand what people think and feel about their needs in a specific product or service category. A great many attitude segmentation studies have been conducted over recent years by consumer products and services companies and advertising agencies. Transit agencies have also sought to segment the market based on riders' and nonriders' attitudes toward using public transportation.

Segmentation on product-related attitudes must always be done on a post hoc basis. The first step in the process is to identify the attitude dimensions or factors that should be included in the analysis. These attitudes must then be reduced to specific statements that respondents can rate on a suitable scale. Several questions often arise during this process.

- **Where do the attitude statements come from**? As a general rule, it is always best to review previous research and/or conduct additional research to develop a complete list of statements. Focus groups or individual depth interviews with qualified respondents who are users and/or nonusers of the product or service category are frequently the methodology of choice. Ideas and observations from these groups can provide a rich source of insights from which specific attitude statements can be developed. They also reveal the language and semantics people tend to use when talking about the product or service category.

- In practice, however, it is often the case that an agency may have conducted focus groups in the past for a variety of purposes and based on these unrelated studies they already have a good understanding of people's feelings. In such cases, attitude statements are simply "assembled" into a list. This list is then distributed to interested parties to add to or subtract from at will. Results might not be quite as good as those resulting from a careful review of focus group transcripts, but many companies do not believe that the additional time and expense is worthwhile.

- **How many attitude statements are necessary**? A major problem is that one really does not know how many. In practice, the number usually will range from 20 to 100. The problem is that without previous research, it is impossible to know if the full and relevant range of attitudes has been identified for inclusion.

- **What type of scale should be used**? There are many different types of scales. Some researchers prefer 7-point verbal scales while others prefer 10- or 11-point numerical scales (1 equals strongly disagree, 10 equals strongly agree). A Likert-type verbal scale is frequently the scale of choice. This decision is probably less critical than others that must be faced. Care should be taken to insure that the length of the scale is adequate to capture the full range of the variance in the responses from the study participants. Also, testing should be done to insure that the anchor points in the scale as well as instructions to the respondents are clear and understandable. Finally, it is important to use a scale that fits the characteristics of an interval scale. This enables the use of the more powerful and widely available "parametric" statistical techniques for analysis.

Once the attitude segments have been developed, it is important to conduct a thorough pretest. In many cases, these pretests can be extensive. An adequate number of pretest interviews should be completed so that analysis can be conducted to determine the reliability of the individual attitude statements in measuring the overall dimensions or factors they are emulating.

In addition to segmenting on product usage as described in the previous section, King County Metro defined six groups based on cluster analysis of attitude and benefit statements about using public transportation. While group classifications were based on attitudes, there were strong correlations within groups on demographic and behavioral characteristics. Three groups had attitudes similar to existing bus riders; the nonriders in these groups were considered potential Metro customers.

Respondents were read 18 statements about transportation. They were asked whether they agreed (strongly or somewhat), disagreed (strongly or somewhat), or were neutral about each. Statements included the following:

- *Offered a choice between convenient transportation and taking a car, I would always drive a car even in rush hour traffic.*
- *Commuting gives me some time to myself.*
- *I'm not very comfortable being around people I don't know.*
- *I don't mind carrying packages on the bus after shopping.*
- *I don't like feeling inexperienced when learning something new.*
- *I need quick reliable service after 6:00 p.m.*
- *The best thing about taking the bus downtown is not looking for a parking space.*
- *I often need to make several stops such as shopping and errands while on the way to or from work or school.*

Based on their answers to these and similar questions, respondents were classified into six segments.

- **Group 1 (27%).** Members of this group had moderately favorable attitudes toward HOV use. They tended to be upscale, well-educated, and worked in middle- or upper-management positions. About half of the households had two wage earners. Commuters had a 63 percent SOV share.
- **Group 2 (14%).** This group supported transit, but 71 percent of the commuters drove alone. Individuals tended to be lower level white collar and skilled blue-collar workers and 41 percent lived in two income households.
- **Group 3 (10%).** Metro considered this group to be representative of "average" Seattle residents. Group members preferred to commute by car, but they are willing to use HOV modes if convenient. They expressed some concern about other bus passengers, did not like to carry packages on the bus, and did not want to transfer. About 39 percent had a college degree.

- **Group 4 (15%).** Group 4 was a well-educated, middle-class group with the highest level of bus ridership in the city. The enjoyed reading on the bus and did not want to worry about parking.

- **Group 5 (20%).** Members of this group tended to be blue-collar residents with modest household incomes who preferred the bus to driving. Many respondents were homemakers or retired.

- **Group 6 (13%).** This group comprises blue-collar households whose members preferred driving to transit. Individuals were uncomfortable with other bus passengers, but did not mind making transfers. Their mode choice depended in part on the price of gasoline.

Three of the groups were considered receptive to HOV services. Groups 1, 4, and 5 had high proportions of bus riders or people with attitudes similar to those held by bus riders. Specifically, the respondents in Groups 4 and 5 – both riders and nonriders – were very supportive of bus ridership and enthusiastic about new services. Group 4 had the highest level of bus ridership in King County; more than half rode the bus five times or more in the month before the survey. Group 5 also had high transit ridership. About 47 percent used HOV services in the month before the survey. While Group 1 was generally supportive of public transportation, many considered it inconvenient to use themselves. About 80 percent of commuters in this group used private vehicles and 63 percent drove alone. Based on these attitudes and behavior, Metro determined that the following groups had the greatest market potential.

- Group 1 – Current riders only.

- Group 4 – Riders and nonriders.

- Group 5 – Riders and nonriders.

Survey respondents also were asked to rate their interest in new services. When asked to select a single option, respondents in all groups most often requested a new bus route. Bus riders in Groups 4 and 5 were more likely than their Group 1 counterparts to be satisfied with the status quo. Only 28 percent of riders in Group 1 did not want any changes, compared with 36 percent in Group 4 and 40 percent in Group 5.

The use of market segmentation data has helped Metro focus on tailoring services to target areas.

Source: *1986 – 1989 Transportation Market Segmentation Study. King County Summary. Telephone Surveys and Data Summaries.* Prepared for Metro, January 1990.

Advantages of Product-Related Attitude Segmentation

Segmenting markets based on product usage provides two major benefits:

- It provides insights and understanding into how people think about feel about a specific product.
- It is useful for the development of advertising or promotional programs.

Limitations of Product-Related Attitude Segmentation

There are, however, some shortcomings associated with product usage segmentation the marketer and planner should be aware of.

- **Attitude segments are often difficult to explain through traditional demographics only.** In many markets, additional bases may need to be employed. Therefore, it is frequently used in conjunction with psychographic or benefit segmentation.
- **The development of attitude statements on which to base the segmentation can be time-consuming and costly.** Unless previous attitude research – often done as focus groups – has been conducted by the agency, its researchers simply do not know the basic attitude dimensions or factors underlying the category or the relative importance of each. Even if prior research has been done, there is no assurance that all relevant attitudes were included.
- **There is often no clear relationship between attitude segments and behavior.** That is, many attitude segmentation studies result in the development of groups of riders or nonriders who have a similar set of attitudes. However, they do not differ in terms of behavior or likely behavior. Nor do they respond differently to changes in the marketing mix. As such, while the attitude "segments" sound good and look interesting, they have little value for decision-making. Most attitude segmentation research has been highly empirical and is likely to remain so.

Psychographics

Definition

One of the more powerful segmentation approaches – psychographics – has come a long way since Emanuel Demby, a marketing research practitioner, first coined the term nearly twenty years ago. There is some confusion about the origin and true meaning of the term "psychographics." Originally, the word was intended as an umbrella to cover all measures of the mind, as distinguished from behavioral and demographic measures. Consequently, it includes such universes of content as lifestyles, personality measures, beliefs, and perceptions. The following three-level definition of psychographics was originally developed by Demby and clearly illustrates the linkage between these many variables.

- Generally, psychographics may be viewed as the practical application of behavioral and social sciences to marketing research.
- More specifically, psychographics is a quantitative research procedure that is indicated when demographic, socioeconomic, and user / nonuser analyses are not sufficient to explain and predict consumer behavior.
- Most specifically, psychographics seeks to describe human characteristics of consumers that may have bearing on their response to products, packaging, advertising, and public relations efforts. Such variables may span a spectrum from self-concept and lifestyle to attitudes, interests, and opinions, as well as perceptions of product attributes.[9]

Demby further identifies three classes of psychographic variables:

- **Product attributes** – as proposed by the marketer and/or as perceived by the consumer.
- **Lifestyle** – evidenced by behavioral variables illustrating the use of time, services, and products by the consumer.
- **Psychological** – often expressed as self-concept, but also involving interests and opinions.

Even today, there is great controversy among marketing practitioners and academics as to what constitutes "psychographics" – and whether or not it is synonymous with the better-known "lifestyle" research. The consensus appears to be that there is a distinction between the two concepts. Looking carefully at the definition of each concept provides further insight into this distinction.

Essentially, **lifestyle research** is a sociological concept that deals with the way in which an individual allocates time, energy, and money to one activity over another.

> Lifestyle is a social science concept connoting the totality of behaviors that comprise the characteristic approach to life of a particular individual or group. . . . Lifestyle, in one important sense, can be looked upon as an allocation problem: given fixed resources of time, how do different groups apportion available time across various activities. . . . Such analysis, in turn, can provide useful bases for predictions of future uses of time, and by inference, future consumption patterns.[10]

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[9] Demby, Emanuel. "Psychographics and From When it Came," in Lifestyle and Psychographics, William D. Wells (ed.). Chicago: American Marketing Association 1975.

[10] Andreasen, Alan R. "Leisure, Mobility, and Lifestyle Patterns," (Chicago: *American Marketing Association Conference Proceedings*, Winter 1967), pp. 55-62.

Since, as this definition implies, lifestyle reflects behavior, it has proven to be an extremely reliable source of information. Lifestyle analysis has proven useful in segmenting and targeting consumers for new and existing products. Lifestyle variables can be divided into three classifications of activities, interests, and opinions. Activities include work, hobbies, social events, entertainment, shopping, and sports. Interests include family, home, fashion, food, media, and achievements. Opinions run the gamut from social issues, politics, and business, to products, the future, and culture. Lifestyle variables permit consumers to be analyzed in terms of how they spend their time, what areas of interest they envision as most important, and their opinions of themselves and their environment. These variables are correlated with such basic demographics as income, social class, and education.

Psychological variables play an important role in profiling the individual consumer, as they tend to "humanize" the data. Psychological variables – essentially what kind of an individual a person is or sees himself / herself to be – are the other side of the psychographic coin. Together, these two classes of variables are useful in defining the current marketplace and forecasting the future marketplace. Lifestyle variables describe how people go about their daily routines; psychological variables attempt to explain why they do so. For the marketer or planner, such segmentation data can answer a number of key questions, such as:

- **To whom should a product or service be targeted**? (e.g., Should a proposed new express transit service be positioned toward the "working mother with two children in preschool who believes that 'time is money,' and that 'a penny saved is a penny earned'" or toward the "male professional who has arrived at the pinnacle of his career and who values the time spent in his luxury automobile and believes that 'concerns about the environment are generally overrated'," or toward the "upwardly mobile male professional who strongly supports environmental causes and believes that everyone must make sacrifices for the environment"?)

- **How should the product or service be positioned**? (e.g., Should the focus be on product-specific attributes such as "speed of travel" or should self-concept needs be the focus with a message such as "you are doing your part for the environment"?)

- **How should the target market be characterized in promotional materials**? (e.g., As a "45 to 54 year old male wearing a suit and carrying a briefcase" or as a "25 to 34 year old male wearing khakis and a tie"?)

It is clear that there is a close link between lifestyle and psychological variables. One amplifies the other; one gives texture to the other. Although some researchers and marketers seem to stress one over the other, good counsel would recommend that psychographics requires both. The purpose of psychographic research is to develop the relationship between the three classes of variables so that one can say,

> "Consumers in Segment A have the highest propensity to use a product or service because its attributes 'fit' the lifestyle that results from self-concept, interests, and opinions."
>
> Or. . .
>
> "Consumers in Segment B might have a higher propensity to use a product or service if certain attributes could be modified so that they are more relevant to lifestyle and psychological attitudes."
>
> Or. . .
>
> "Consumers in Segment C have a low propensity to use a product or service because its attributes do not relate either to lifestyle or self-concept."

Conducting Psychographic Research

There is no one best practice or approach in conducting a pscyhographic segmentation study. There are, however, some guidelines to follow.

- **Seek detail**. Psychographics are complex. The more relevant the data collected, the better the resulting information will be. A review of existing literature – notably academic publications in the fields of marketing, consumer behavior, and psychology – can suggest possible psychographic dimensions and tested scales to measure these dimensions. Focus groups or other exploratory research can be an effective means of identifying possible psychographic dimensions or variables to include and to pretest the pscyhographic survey instrument.

- **Personal or telephone interviews are the generally preferred methods for data collection**. Because of the amount of data that needs to be collected, mail questionnaires are generally inappropriate. This approach results in a low return rate, with many unusable or incomplete questionnaires. Moreover, there is limited ability to use different versions of the questionnaire, increasing the amount of response order bias in the survey instrument. The choice between personal or telephone interviews depends largely on the sampling design selected.

- **The heart of the survey instrument are the scales**. To develop viable individual and segment profiles based on lifestyles, a large number – anywhere from two dozen to several hundred – scales measuring an individual's activities, interests, and opinions must be developed. Again, a review of existing literature provides a great source of already tested scales. Two books – Bruno and Hensel's Market Scales Handbook and Bearden's The Handbook of Marketing Scales – are excellent reference tools. In addition to developing the attitude statements, consideration must be given to the scale used. Many psychographic studies use a Likert five-point agree / disagree scale to determine the extent to which respondents agree or disagree with each statement. The magnitude of the response is a critical measure of personality traits and lifestyles. Some researchers argue for longer scales. The length of the scale should be as long as is required to capture the variance in the data. Careful pretesting is required to make this decision.

- **Factor analysis should be considered as part of the analysis plan**. Given the sizable number of statements that are typically used, factor analysis is frequently the tool used to reduce the lifestyle and psychological variables down to a more manageable number for further analysis. As part of the process of creating an overall dimension, factor analysis also has the effect of reducing the variance in the data compared with that of using a single measure. The resulting factors or dimensions are the critical factors used for defining and describing market segments.

- **Consider alternative analytical approaches**. There are many potentially valuable techniques for developing market segments. These are described in more detail in Chapter 3. Do not become reliant on only one technique. Consider what is most appropriate to the situation at hand.

- **Avoid preconceived notions about the research findings**. In addition to establishing research objectives, developing research hypotheses before conducting the research is a valuable tool to insuring an open mind. These research hypotheses can be described in terms of a model.

- **Do not forget the value of secondary data**. While a psychographic study places heavy reliance on primary research, this does not mean that secondary data should be ignored. Secondary data from past research conducted by your agency, research from other agencies, and published or syndicated data can prove useful in both the design of the research and the interpretation of the results.

- **Add in other physical and behavioral dimensions to better define market segments.** Psychographic variables should not be the only measures on which segments are described. To maximize the validity of segment profiles, additional bases should be used. Demographics and product usage – ridership – are two useful bases to include. Other bases might be indicated depending on the objectives of the research.

- **Name the segments.** Once a reasonably accurate segment portrait has been established, you can develop tag descriptors for each designated segment. These descriptors should capture some key characteristics of the segments. The explosion in the field of graphics software also makes it possible to easily attach pictures or other devices that further exemplify the segments. This makes it easy to refer to the segments. Moreover, it is a useful tool to encourage excitement about and buy-in to the results. Note that some researchers do not name the segments, believing that the names are often overly simplistic, may not accurately portray the real richness of the segments, and may potentially mislead users who do not read the full segment descriptors.

If you are considering using psychographic research, ask yourself the following questions:

EXHIBIT 5
USING PSYCHOGRAPHIC AND/OR LIFESTYLE RESEARCH

- ✓ Is custom or syndicated lifestyle / psychographic research required?
- ✓ Is there in-house capacity to assist in the project?
- ✓ What are your research objectives?
- ✓ Have you spoken with at least two research firms or consultants with expertise in psychographics?
- ✓ Do they have experience in your market or a closely related market?
- ✓ What are the professional and academic qualifications of the researcher(s)?
- ✓ Have they provided detailed proposals?
- ✓ From a methodological perspective, exactly what is entailed in your study?
- ✓ Will the research be used to identify new market segments, describe existing segments, or predict differences in customer behavior?
- ✓ Do you have other syndicated research service data or your own primary research data available to validate the psychographic research?
- ✓ What supporting dimensions – in addition to the psychographics – will be used in the study?
- ✓ Will this psychographic segmentation approach respond to changes in the marketplace?
- ✓ How closely will the researcher work with your company in project design, implementation, and strategy development?
- ✓ How will you use the data? Who in your organization will find the information valuable?
- ✓ How much does the study cost? Is the cost of the study commensurate with the value it will provide?

Applications of Psychographic Segmentation

Significant socioeconomic changes in the United States have had a profound impact on how marketers reach women – the fastest growing segment on the Internet. A psychographic and lifestyle segmentation study of the female online populations provides insight into how the Internet should fit into brand media plans when targeting women.

Women will comprise 48 percent of all online users by the year 2000 and 48 percent of the national workforce by 2005. Women now own one-third of American businesses. Nearly half of working wives now provide 50 percent or more of their family's income. Using a sophisticated factor analysis procedure, NetSmart, a research firm in New York that specializes in surveys that provide Web site strategies and tactics, discovered that there are no cohesive subgroups of women online. Instead, they found overlapping groups of women with overlapping, multi-faceted responsibilities and interests.

Ms. Biz. A career woman and investor, she goes online for convenience and success. Typically employed full-time, the Internet is a routine part of the way she works, plays, interacts and shops. Instead of the phone, Ms. Biz will log online with e-mail, her preferred means of communications.	**Self Perceptions**: Career is "extremely important" The majority juggle family and career **Perceived Benefits of Internet:** Internet saves them time Value the convenience Lets them bank and shop after hours **Role of Internet as *Business Tool*:** Use the Internet to: Send or respond to e-mail Do business research online Communicate with other employees Work from home
Dr. Mom. Over half of the women online are moms. Like all mothers they wear many hats. They are the self-appointed online censors.	**Self Perceptions**: Put children before everything else Family expects them to have all the answers Consider themselves to be Dr. Mom **Perceived Benefits of Internet:** Helps them help their children New recipes Makes them a smarter mom Helps with homework **Role of Internet as *Health Tool*:** Use packaged goods and pharmaceutical Web sites for: Nutritional and weight information Information on illnesses and injuries Dosages and side effects of drugs

Midnight Shopper. Women no longer have time to shop during retail hours – they now shop online. Unlike stores and catalogs, the Internet allows them to place orders 24 hours a day. They go online to bargain hunt, shop, and browse for unique merchandise. They are opinion leaders who are eager to be the first to discover new products and immediately share these discoveries via the Internet grapevine.	**Self-Perceptions / Perceived Benefits**: More convenient Available 24 hours Entertaining and fun Allows them to be first to try new products. **Role of Internet *Convenience and Fun***: Use the Internet as: Electronic Home Shopping Network
Household CEO. Typically single women and working mothers, these women are often the final decision-makers for major purchases, household finances, and vacations. Many pay all the monthly bills – they are prime prospects for the convenience of online banking.	**Self Perceptions / Perceived Benefits**: Do-it-yourself "Consumer Reports" Saves them time Makes them a smarter shopper More convenient than stores Can ask dumb questions without feeling stupid Makes technical information easy to understand Lets them handle business when banks and stores are closed. **Role of Internet as *Household Tool***: Use the Internet for: After hours shopping, travel planning, etc. Ultimately may use for online investments and banking when security concerns are alleviated
Time Out for Me. Along with career and families, women have personal needs and interests, from finance to fitness to fashion. They go online to stay on top of current events, get stock tips, and find out the latest fashion trends.	**Self-Perceptions**: They love to cook and experiment Excitement and adventure are important to them They love to shop but don't have time. **Perceived Benefits**: Entertaining and fun Keeps them up to date with current events Lets them shop when stores are closed Makes them a smarter investor **Role of Internet *Relaxation and Self-Gratification***: Use the Internet to: Engage in personal pursuits

Successful Web sites will be the ones that recognize and develop content to satisfy the needs of women's multifaceted lives – from career woman to mother to self. The Internet offers a unique opportunity for advertisers to create ongoing, one-to-one relationships with women that generate long-term customer loyalty.

Source: Gina Garrubbo and Bernadette Tracy, "What Makes Women Click?," *Online Media Strategies, Supplement to Advertising Age*, Spring 1998, pp. 12a to 14a.

The State of California has been the leader in developing Transportation Demand Management programs. A comprehensive package of TDM activities currently encompassed in the Caltrans annual TDM work plan includes statewide and regional marketing activities, rideshare operations, Transportation Management Association (TMA) development and assistance, telecommunications demonstrations, advanced traveler information systems, child and family transportation issues, and other TDM research. The TDM program is closely linked to broader Caltrans transportation system management responsibilities, including both operations and planning functions over the short- and long-term.

In 1991, Caltrans developed a Strategic Statewide Marketing Plan. In the development of this final plan, extensive market research, including the use of psychographic segmentation methods, was conducted. This plan serves as the cornerstone to Caltrans' overall TDM activities and guides the Districts and their partners in their activities.

The California Department of Transportation (Caltrans) initiated its first transportation system management programs in the early 1970s. Significant expansion began in 1988, making the first step in a multi-year transition from a limited demand management effort, commonly known as "ridesharing," to becoming today's full-scale transportation demand management (TDM) effort. As part of this effort, Caltrans worked to develop a Strategic Statewide Marketing Plan. In the development of this final plan, extensive research was conducted. One phase of this research included a psychographic segmentation study. The objectives of this research were to:

- Develop a clear and valid understanding of the broad California marketplace.
- Profile distinct commuter audience segments.
- Identify "optimal" target audience segments that offer the greatest potential for TDM marketing.
- Provide input for the development of TDM marketing strategies and messages intended to reach the desired target segments.

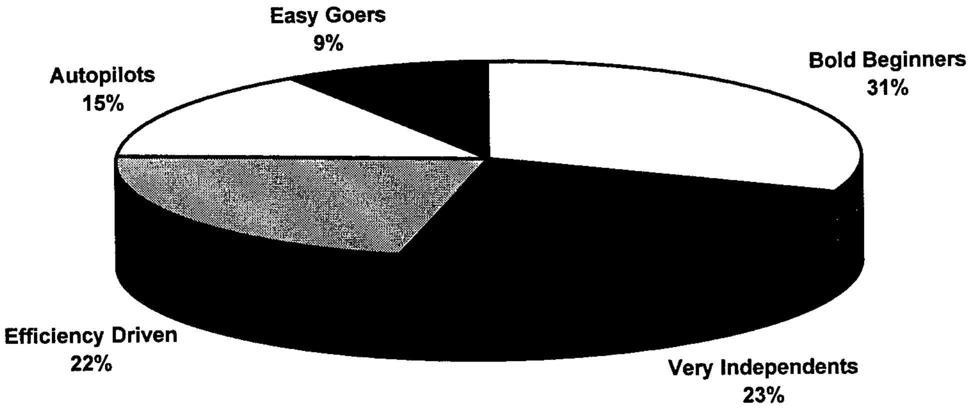
The methodology consisted of 2,100 telephone interviews among adult commuters. Four hundred interviews were conducted in each of five broad geographic areas: Los Angeles, San Diego, San Francisco, Sacramento, and 'other' California. Areas of inquiry included:

- Demographics.
- Commute characteristics / volume.
- General lifestyle attitudes and opinions.
- Mode attributes and desired benefits.

In defining the optimal target market, Caltrans identified five criteria. The optimal target market should:

- Account for a substantial amount of SOV behavior.
- Be potentially receptive to TDM marketing efforts and exhibit a willingness to try alternatives.
- Represent a substantial portion of the overall commuter population.
- Share common characteristics with each other.
- Be efficient to communicate with / reach.

Five commuter audience segments were identified:



These segments have the following characteristics:

EXHIBIT 6
SEGMENTS DEVELOPED FOR CALTRANS' TDM MARKETING PLAN

The Bold Beginners	Very frustrated with commute. Would like to find an easier way to get to work / reduce stress. Willing to try something new. Would like someone else to take responsibility for commute. Most likely to have carpooled, taken the bus, or biked.
The Very Independents	Pragmatic and self-reliant. Set high personal standards. Need to maintain control and schedule flexibility. Do not want to rely upon others. Hate wasting time / want to get there quickly. Unlikely to use alternative modes / most likely to drive alone.

The Efficiency Driven	Want an orderly, structured, and predictable life. Looking for ways to reduce stress. Frustrated with the work commute. Most concerned about having control / not relying on others. Hate wasting time. Most open to information about alternative modes.
The Autopilots	Not frustrated with commute. It is part of their daily routine. "Get the job done" mentality. More Caucasians and older. Most likely to drive alone. Least likely to use alternative modes.
The Easy Goers	Passive personality / easy going. Less need to be in control. Not overly accomplishment-oriented. Not concerned with mode image. Find commute difficult, but manageable. Most likely to use alternative modes in future. Least likely to drive alone. Younger males, skilled labor and service workers.

Based on this research and the segmentation criteria defined above, the most promising target was identified as "The Bold Beginners." It was seen as the largest segment and the most open to using new modes. A secondary target, "The Easy Goers," was also identified. While small, this segment was determined to be reachable. They exhibit an inclination to alternative modes and it was believed they could be captured with a special effort. Finally, a tertiary segment, "The Efficiency Driven," was selected. Again, this is a large group and proves open to information.

Source: *Statewide Strategic Marketing Plan for Transportation Demand Management*, State of California Department of Transportation, Office of Traffic Improvement, January 1994.

Benefits

Psychographic research represents a major step forward in marketing research as it is oriented toward understanding the total human being as he / she goes through the purchase decision-making process, enabling the marketer or planner to develop meaningful strategies to solve marketing problems. Segmentation based on psychographics has proven to be most useful in:

- **Identifying target markets**. Although typically used more in advanced analyses than initial segmentation efforts, segmentation can be very useful in identifying and explaining markets. Consumer differences extend beyond demographic and psychographic research problems into an individual's state of mind, enabling the marketer or planner to piece together a total picture of the market.

- **Better explaining consumer behavior**. Markets are made up of a variety of people. By analyzing consumer behavior, the marketer or planner can better understand why the consumer acts as he or she does in the marketplace. Psychographic research can assist in meeting this objective. Buyer behavior – including such factors as mode choice, commitment to transit ridership, personal motivations, attitudes, perceptions, and preferences – can all be explored via this approach to segmentation. The value of this information cannot be underestimated.

- **Improving an agency's strategic marketing efforts**. The additional information available through psychographic analysis can be employed in planning successful marketing strategies for transit agencies. Psychographics is most useful in situations where use of the product or service is discretionary, as is the case of the "choice" rider. Strategic information gathered through a psychographic analysis can permeate all marketing areas of the company, including positioning new products / services or repositioning existing products / services, improving products or services to better meet segment needs, recognizing the importance of price factors in a given market, developing promotional strategies – notably selecting appropriate media vehicles, advertising messages, and sales appeals.

- **Minimizing the risks for new products / ventures**. The cost of introducing a new product or service can be substantial. Furthermore, the vast majority of such efforts fail – new product success rates are estimated at less than 10 percent. Often the key ingredient to a new product or service's success is locating the subtle product or concept variations that potential customers desire – their needs and wants. By incorporating psychographic research into your agency's product testing and development program, success rates can be increased.

Limitations

Although segmentation on values and lifestyles offers a richness and depth of information that is particularly useful for marketers, there are limitations that one must be aware of.

- **Problems in Data Collection and Analysis**: Psychographic research requires a much more complex approach to both data collection and analysis than does segmentation based on demographics or geodemographics. This is because psychographic segmentation mostly relies on primary market research findings. Moreover, this research is usually more complex than that required for standard market research studies in which a priori segments have been defined. Data collection is often a problem due to the large number of questions asked via a survey instrument. Interviews exceeding 30 to 40 minutes are not uncommon in these types of studies. Compounding this problem is the analysis of a voluminous amount of data, often requiring the use of more advanced multivariate statistical techniques in seeking important marketing relationships.

- **Cost**: A well-designed psychographic study is generally more expensive than other types of marketing research. Expect to invest a minimum of $40,000 to $50,000 for this type of research. Costs ranging near or above $100,000 are not uncommon.

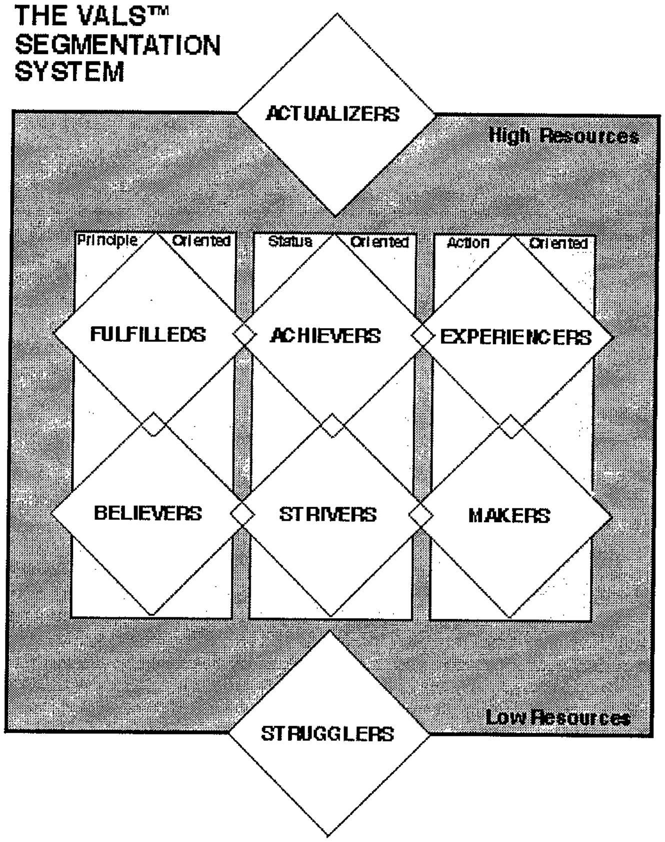
- **No Guarantees**: Finally, even with the best-designed research, carried out using the most stringent procedures, and expertly analyzed by experienced researchers there are no guarantees that a usable segmentation schema will result. Segments may result that are not meaningful, are not large enough, are not readily distinguishable from each other, or are not responsive to different strategies. The results of the research may prove inconclusive. That is, while segments are identified, they cannot be replicated in this or other studies. This raises concern regarding the reliability of the segmentation schema. While these are not typical situations, it is not unheard of and any agency undertaking a study of this type must be aware of these potential pitfalls.

Another Option: Syndicated Lifestyle Research

The marketer or transit planner in need of psychographic data does not have to opt for a custom segmentation study. Syndicated research services are available that may be incorporated into other research the agency is conducting. Probably the best-known provider of such a service is SRI Consulting (SRIC) with their Values and Lifestyles (VALS™) psychographic consumer segmentation system. VALS is designed for understanding and marketing to consumers. It is built on the concept of self-orientation, and a new definition of resources.

- **Self-Orientation**: Consumers pursue and acquire products, services, and experiences that provide satisfaction and give shape, substance, and character to their identities. They are motivated by one of three powerful self-orientations: principle, status, and action. Principle-oriented consumers are guided in their choices by abstract, idealized criteria rather than by feelings, events, or desire for approval and opinions of others. Status-oriented consumers look for products and services that demonstrate the consumers' success to their peers. Action-oriented consumers are guided by a desire for social or physical activity, variety, and risk-taking.
- **Resources** include the full range of psychological, physical, demographic and material means and capacities consumers have to draw upon. Resources include education, income, self-confidence, health, eagerness to buy, intelligence, and energy level. It is a continuum from minimal to abundant. Resources generally increase from adolescence through middle age but decrease with extreme age, depression, financial reverses, and physical or psychological impairment.

Using these two dimensions – self-orientation and resources – VALS defines eight segments of adult consumers who have different attitudes and exhibit distinctive behavior and decision-making patterns. The segments are balanced in size so that each truly represents a viable marketing target. Neighboring types have similar characteristics and can be combined in varying ways to suit particular marketing purposes.



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Following are descriptions of the eight VALS segments.

EXHIBIT 7
VALS SEGMENTS

Actualizers exhibit self-confidence and optimism. They share wide intellectual interests, engage in varied leisure activities, are well-informed, and lead active social lives. They are change leaders and are highly receptive to new products and technologies.

Fulfilleds are usually mature and reflective. Their leisure and consumption activities center on the home. They gravitate strongly toward education and information, often reading widely and watching educational programming.

Believers are strongly traditional and respect rules and authority. They prefer a settled, predictable lifestyle, socializing within the family and established groups. Fundamentally conservative, they are slow to change and technology averse.

Achievers opt for a moderate, goal-oriented lifestyle. They center their lives on career and family. They prefer premium products. They avoid situations that introduce a high degree of change and stimulation.

Strivers are often dissatisfied and unsure in their day-to-day lives. They have little discretionary income and tend toward narrow interests and social isolation. However, they are image conscious within their immediate peer group.

Experiencers appreciate the unconventional. They are active and extroverted, and they like stimulation by the new, offbeat, and risky. Their lifestyle focuses on fashion, exercise, socializing, and sports.

Makers value practicality and self-sufficiency. They prefer hands-on, constructive activities and spend leisure time with family and close friends, rarely joining organizations. Preferring value to luxuries, they buy basic products.

Strugglers' lives are narrowly focused by their lack of educational and financial resources. Strugglers feel powerless and are risk averse. Conservative and traditional, they are concerned about their security. Brand loyal, they use coupons and watch for sales.

Source: SRI International http://future.sri.com:80/vals/diamonds.html

SRIC's national database provides information about the products, services, and media preferences of each VALS type. The VALS questionnaire can also be used to identify the VALS type of particular groups of people.

SRIC also offers GeoVALS™. GeoVALS is a geographical overlay for the VALS system. It provides individual segmentations for each of the 35,000 5-digit zip codes in the United States. Such an arrangement is a useful alternative to traditional geodemographic techniques, which assume that all people in a neighborhood think and behave alike.

The exhibit below shows the distribution of VALS types in a notable zip code versus that of the national average:

EXHIBIT 8
GEOVALS™ – BEVERLY HILLS, CA 90210

Type	Locality Density	National Average
Actualizers	36.5%	9.8%
Fulfilleds	21.9%	11.0%
Believers	5.5%	16.5%
Achievers	21.5%	15.6%
Strivers	2.4%	13.8%
Experiencers	7.3%	11.8%
Makers	2.8%	10.8%
Strugglers	2.1%	10.7%

Source: GeoVALS/Market Statistics

SRI maintains proprietary and nonproprietary databases on consumer demographics, psychographics, and spending patterns that can help identify key target markets, design products that appeal to target markets, develop effective marketing strategies, and account for the effects of future uncertainties. An option is available to use the VALS typology as part of another research effort your agency is conducting. SRI provides you with a battery of 35 questions as well as six demographic questions that you include in your questionnaire. The data collected from this battery of questions is sent back to SRI International who analyzes it and returns the segmentation data to the agency. You can then examine the differences, if any, in responses to other questions on the survey across these segments. Consumer products and service companies throughout the United States have successfully applied VALS to improve product development, product positioning, advertising effectiveness, and corporate image.

VALS has been widely used for a variety of private sector products and services. For example, a telecommunications company used VALS to estimate the future demand for new products and services, a home builder used VALS to identify the values and preferences of potential home buyers and to test responses to prototype houses, and an automobile manufacturer used VALS to redesign its sport utility vehicle to meet the preferences of most likely buyers. However, VALS has not been widely used in the public sector. Its applicability to services and notably to public transportation is unknown. No transit system is known to have used VALS.

There are also other syndicated services available. These include:

- The *Yankelovich Monitor* is an annual survey of more than 50 social trends relevant to consumer marketing. The recognition of the impact of key trends in a given market can provide valuable information for an agency's strategic planning. Examples of some recent Monitor trends include personalization, physical self-enhancement, health orientation, meaningful work, new romanticism, return to nature, anti-bigness, concern about environment, responsiveness to fantasy, and emphasis on winning.[11] Yankelovich's generalized typology is more useful in understanding value systems operating in the country as a whole than specific markets. However, its usefulness cannot be underestimated. Watch for published articles discussing the results of the *Yankelovich Monitor.*

- The *List of Values* (LOV) developed at the University of Michigan is an alternative to VALS that is gaining favor. Advantages of LOV are that it is in the public domain and has been shown to relate closely to consumer behavior and predict trends.[12] Values measured include self-respect, security, warm relationships, sense of accomplishment, self-fulfillment, being well respected, sense of belonging, and fun / enjoyment / excitement.

Other syndicated lifestyle services include DYG's Environmental Scanning Program and leading advertising agency services such as DDB Needham's Life Style Study, Ogilvy and Mather's New Wave, and Backer Spielvogel Bates Worldwide's Global Scan.[13]

Some of these syndicated studies are conducted at local levels. For example, the Consumer Market Profile™ (CMP) produces detailed information on consumer purchasing patterns for a wide array of local products and services. Additionally, the CMP provides greatly expanded demographics and a complete segmentation of the market by its unique, local psychographic groups. Lastly, the CMP encompasses a detailed profile of the market's media habits, including television viewership by program radio listenership and readership of newspapers, direct mail, and advertising inserts.

A local television station typically sponsors the CMP. The markets served range considerably in terms of market size and geographic location. Representative markets currently being served include Albuquerque, Atlanta, Charlotte, Chicago, Colorado Springs, Houston, Jacksonville, Las Vegas, Louisville, Minneapolis-St. Paul, New York, Oklahoma City, Providence, Reno, Sacramento, Salt Lake City, San Diego, Seattle, and Washington, D.C. The results of the research are available to advertisers on the station. For little or no cost, advertisers on the sponsoring station can include specific questions of interest on the survey instrument. Currently, transit agencies have made little or no use of this information in any of the markets in which it is available.

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[11] Yankelovich Monitor: *Technical Description Reference* Book (Westport, Conn: Yankelovich, Clancy, Shulman, 1985), and other company marketing materials.

[12] Lynn R. Kahle, Basil Poulas, and Ajay Sukhdial, "Changes in Social Values in the United States During the Past Decade," *Journal of Advertising Research*, February – March, 1988, pp. 35-41.

[13] Rebecca Piirto, "Measuring Minds in the 1990s," *American Demographics*, December 1990, pp. 30 – 35.

The Chicago Chamber of Commerce in conjunction with WBBM TV (Chicago) has followed changes in the psychographic profile of the Chicago market for 10 years, beginning in 1987. Based on a random sample of 2,000 Chicago area residents, the market has been divided into seven psychographic groups, each with its own set of values, attitudes, and self-concepts that make it unique.

GROUP I *18% of adult population* *Average age: 43* *Average income: $85,700* *44% male; 56% female*	▪ Affluent and successful ▪ Happy and in control of their lives ▪ Busy, outgoing, and confident ▪ Among the most liberal in the market ▪ Risk takers and adventurous ▪ Will spend more to get high quality or to save time
GROUP II *18% of adult population* *Average age: 41* *Average income: $83,100* *59% male; 41% female*	▪ High achievers; very career oriented ▪ Support traditional view of family ▪ Very conservative, but not active politically ▪ Socially active ▪ Enjoy possessing status symbols ▪ Want high quality and are willing to pay for it
GROUP III *15% of adult population* *Average age: 40* *Average income: $51,600* *46% male; 54% female*	▪ Average Americans, but life falls short of expectations ▪ Income does not satisfy families' basic needs ▪ Home and family are important ▪ Put great stock in the motherhood role ▪ Look for lowest prices and watch for sales
GROUP IV *11% of adult population* *Average age: 40* *Average income: $54,600* *49% male; 51% female*	▪ Young, optimistic and on their way up ▪ Risk takers; change is no problem ▪ Very social ▪ Tend to be liberal minded ▪ Women's rights are an important issue ▪ Will buy quality merchandise that has lasting value; low price is not as important as the right item

GROUP V *10% of adult population* *Average age: 47* *Average income: $56,200* *55% male; 45% female*	▪ Very traditional values ▪ Proud of their jobs and families ▪ Very conservative approach to family, religion, and politics ▪ Very patriotic ▪ They like the basics, no gourmet items or trendy styles ▪ Tend to be very loyal to stores and brands they trust; look for merchandise that's sturdy, dependable, and functional
GROUP VI *12% of adult population* *Average age: 57* *Average income: $25,200* *43% male; 57% female*	▪ Oldest group, very nostalgic and traditional ▪ Needs and wants are few ▪ Enjoy the predictable routine ▪ Deeply religious ▪ Want moderate quality at reasonable prices, will pay attention to sales
GROUP VII *16% of adult population* *Average age: 40* *Average income: $21,900* *37% male; 63% female*	▪ Life is a constant struggle ▪ Generally unhappy and pessimistic about the future ▪ Social, but tend to socialize at home ▪ Many are female; support women's rights issues ▪ Not particularly religious ▪ Always looks for lowest prices when shopping

Some shifts in the psychographic profile of Chicago have been noted over the past ten years. There has been an increase in the incidence of Group I profiles and a decrease in the incidence of Group VI profiles.

In addition to the psychographic data, data on product purchases (e.g., automobile) as well as extensive demographic information is gathered.

***Source**: Materials provided by Chicago Chamber of Commerce and LeighStowell & Company marketing materials*

Some industries have developed psychographic segmentation models that are unique to their industry. While the transit industry has not developed such a model, one has been developed for the electric and gas industry. It has proven useful help electric utilities better understand and serve current and future customers and markets..

Faced with many competitive pressures in the marketplace and recognizing that traditional segmentation of utility customers – residential, commercial, and industrial – is insufficient to optimize marketing resources, the electric utility industry began to seriously examine alternative ways to segment the market. The Electric Power Research Institute (EPRI) began a major marketing research project designed to produce a more insightful understanding of the "electric consumer" on a national basis. Out of EPRI's project – "Customer Preferences and Behavior" – emerged six attitudinal segments of the residential market. The attitudes, values, and desires held in common by the customers in each of these segments help shape their energy-use patterns and their opinions about energy policies. Using the EPRI program methodology, the management of Snohomish County Public Utility District (WA) developed a framework that allowed it to understand, examine, and communicate with the various segments in their market.

In May 1989, the Snohomish County PUD (WA) undertook a market segmentation study using in part the EPRI model. Based on a comprehensive telephone survey of 1,000 PUD residential customers, six separate energy needs-based segments of the Snohomish PUD market were calibrated as follows:

NAME	DESCRIPTION	% Snohomish County Pop.	% of U.S. Population
Appearance Conscious	Concerned about image, high consumers, conservers	6%	18%
Hassle Avoiders	Want minimal effort in product search, high consumers, low conservers	8%	13%
Lifestyle Simplifers	Show least concern about convenience, technology, low consumers, high conservers	22%	17%
Pleasure Seekers	Open to a wide variety of energy appeals, average consumers, low conservers	19%	22%
Resource Conservers	Have concerns about cost and environment, average consumers, average conservers	21%	17%
Value Seekers	Show interest in conservation and best use of money	23%	13%

The Snohomish PUD has proportionately more Value Seekers and fewer Appearance Conscious customers than have been identified at the national level.

Conservation participation differed significantly by segment. Lifestyle Simplifiers have the highest conservation participation rate (49%) followed by the Appearance Conscious (46%) and Value Seekers (45%). On the other hand, the lowest conservation rates were noted among the Hassle Avoiders (31%), Pleasure Seekers (40%), and Resource Conservers (40%). On the surface it would appear that the Appearance Conscious segment would represent the greatest marketing opportunity. However, this energy needs segment is underrepresented in Snohomish County and represents the smallest segment in the population.

From a marketing standpoint, therefore, the top segments Snohomish PUD chose to focus new programs and messages on were the Value Seekers, the Resource Conservers, and the Pleasure Seekers. Specifically, Resource Conservers and Value Seekers are the primary targets for conventional conservation programs – many have electric heat and don't have gas availability. Pleasure Seekers and Resource Conservers are the primary targets for expanded, fuel-switching, conversation programs – many have electric heat but also have gas availability.

Source: *Energy Market Segmentation Study, prepared for Snohomish County Public Utility District #1, Electric Power Research Institute, and Bonneville Power Administration, October 31, 1989.*

Benefit or Needs-Based Segmentation

Definition

Some of the most common questions asked by management are . . .

> *What specific product / service benefits or features are most important to our customers and potential customers?*
>
> *What are the hot buttons?*

The answers are critical for decisions involving product or service design and positioning efforts. Benefit segmentation has become a useful tool in answering these questions.

Benefits are the sum of product advantages or satisfactions that meet an individual's needs or wants. In essence, benefit segmentation answers the question, "What is the product – in this case transit – going to do for me." Benefits extend beyond product features and serve to satisfy physical, emotional, or psychological needs. The belief underlying this segmentation strategy is that the benefits that people seek in consuming a given product are the basic reasons for the existence of true market segments.[14] Benefit segmentation probes users' buying motives and is linked directly to the marketing discipline of consumer behavior. A compilation of key benefits is analyzed in determining pertinent market segments.

Benefits are closely allied with other bases for segmentation – product usage and psychographics. An individual's life style, values, and habits, including past purchase behavior, generally have a great impact on subsequent benefits sought by that person.

Conducting Benefit or Needs-Based Segmentation Research

The approach to benefit or needs-based segmentation is similar in scope to that used in psychographic segmentation and the same guidelines described earlier (pages 51 to 52) prove useful. A typical benefit segmentation study includes the following steps:

1) Prepare a set of stimuli (e.g., product benefits, features, flavors, problems to be solved, etc.) based on data obtained from focus groups, earlier surveys, or similar means.
2) Ask respondents to pick up to k of the n items that are most preferred. The value of k is usually set between one-third and one-half of n.
3) Three variations of this approach are also in use:
    a) In telephone surveys, the reference set of n items is not stated in advance but is constructed (after the study) from the respondents' open-end responses.
    b) Instead of picking up to k out of n most desirable benefits, ask the respondent to choose up to k_1 benefits that are critical to brand choice and then up to k_2 of the remaining benefits that are highly desirable.
    c) Ask respondents to rate all benefits using some kind of scaled questionnaire (e.g., most important to least important).

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[14] Haley, R.I., "Benefit Segmentation: A Decision-Oriented Research Tool," *Marketing Management*, 4 (Summer 1995), pp. 59 – 62.

4) Obtain various background data (e.g., demographics, current product-use occasions, psychographics, etc.) to examine additional relationships among segments constructed from the benefit-preference data.[15]

While this seems like a relatively simple procedure, there are several problems with such an approach.

1) Respondents sometimes do not know the importance of some features in making their choices.
2) They may know the importance of such factors but be unwilling to admit this, even to themselves. This is particularly true in transit where few people wish to admit that they are not concerned with the environment or that they value the privacy that their private automobile offers.
3) They rate too many features or attributes very high in importance. In one study for a transit agency, respondents rated two-thirds of the attributes as a "5" or "extremely important." The lowest mean score for any attribute was 3.95 on a 5-point scale. Without some kind of standardization procedures, results of this kind provide little specific direction for planning efforts.
4) Some benefits or features are "important" to people but have little effect on the actual mode choice decisions. These are benefits or features that simply must be present – for example, personal safety while riding or waiting for the bus, on-time performance, etc. Transit agencies must offer these features because they are "important." However, they will get no credit for them when competing for share of mode. Therefore, they do not offer a competitive advantage.
5) They often overstate the importance of "sensible" benefits (e.g., price, safety, and convenience).

Conjoint analysis represents a methodology that can be used to overcome some of these inherent problems. Conjoint analysis determines the relative importance of product or service attributes. This technique is preferred by many because (1) it provides attribute importance measures that do not rely on direct ratings from respondents, (2) it forces trade-offs among very important attributes to determine which ones are the most important when it is not possible to provide both, and (3) it does this for each individual separately. The results of a conjoint analysis provide utilities for each level of each attribute as well as an overall attribute importance weight. These latter scores can be used for segmentation analysis using cluster analysis or other multivariate procedures designed for market segmentation.

Finally, another useful approach to conducting benefit or needs-based segmentation is to reverse the process and to focus on *unmet needs* or *attribute deficiencies*. These can be measured by including a "comparison standard" in a survey and asking respondents to rate a company or brand performance on each attribute in relation to the comparison standard. One approach here is to ask respondents to rate the importance of the product / service attributes. A follow-up question examines how well the product or service in question meets their requirements. For example:

> *Please tell me how important each of the following items are in deciding how you will travel to and from work or school. As I read each one, please tell me whether it is extremely important, very important, somewhat important, not very important, or not important at all.*
>
> *I can count on it to get me to where I am going on time.*
>
> *It offers me the flexibility I need for my schedule.*
>
> *It gets me to and from work / school without feeling stressed.*
>
> *It gives me an opportunity to be alone to think.*
>
> *It is good for the environment.*

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[15] Green, Paul E., Abba M. Krieger, and Catherine M. Schaffer, "Quick and Simple Benefit Segmentation," *Journal of Advertising Research* (June / July, 1995), pp. 9 – 15.

Now for the same items, I would like you to tell me how well public transit meets your needs for getting to and from work or school. As I read each one, please tell me whether it completely meets your requirements, meets your requirements most of the time, sometimes meets your requirements, rarely meets your requirements, or does not meet your requirements at all.

I can count on it to get me to where I am going on time.

It offers me the flexibility I need for my schedule.

It gets me to and from work / school without feeling stressed.

It gives me an opportunity to be alone to think.

It is good for the environment.

A deficiency score is computed by subtracting what is important to them from how well transit meets their requirements. When these two ratings are subtracted across all attributes, the result is a column of deficiency scores for each respondent. These scores are then used to identify groups of respondents having similar patterns of deficiencies. These represent market segments that have the same unmet needs. Segmentation of this kind offer considerable opportunity for product / service improvement efforts, extensions of existing products or services, or the development of new products. Deficiency segments can be among the most directly actionable by an organization, because they show customers' and noncustomers' needs that are currently not being met. Many transit agencies currently conduct customer satisfaction research in which they collect both importance ratings and service evaluations. This data can be used for market segmentation purposes.

Applications of Benefit or Needs-Based Segmentation

Despite the usefulness of benefit or needs-based segmentation, few uses of this approach were found in the transit industry. While many agencies – for example the RTA in Chicago – have collected data on the importance of attributes in the mode choice decision, they have not used this data for market segmentation purposes. However, it is used extensively in other industries, both public and private.

Caltrans and Amtrak West have conducted extensive research to aid in the development of marketing strategies for the three California corridors – the San Diegans, the San Joaquins, and the Capitols. Research has shown that the market for Favorable Nonusers – defined as individuals who travel in the California corridors, have not ridden Amtrak in the last year and have at least a somewhat favorable impression of traveling on Amtrak – is large – over 37 percent of the total nonuser market. Obviously, capturing even a small portion of this nonuser market would have significant impact on corridor ridership.

To better understand this market, Caltrans and Amtrak West conducted a Survey of Nonusers. A random sample of over 1,600 favorable nonusers was completed by telephone. This comprehensive survey of nonusers examined consumer awareness of, attitudes towards, and the potential use of the three Amtrak California corridors among nonusers. This study also provides a better understanding of the characteristics of nonusers, potential barriers to ridership, possible changes in service, and other product improvements that would convert nonusers to users.

A primary purpose of this research was to identify market segments that represent the greatest potential for ridership. While most aspects are relatively important, it is likely that different segments of the target population are seeking different benefits. Analysis was completed to uncover the underlying benefit segments. Five benefit segments were identified – three of which represent the greatest opportunity for ridership growth.

- The largest segment (26% of the target population) is seeking a **hassle-free experience**. This segment is clearly differentiated from other nonusers by the importance they place on being able to get other things done and being able to meet interesting people. Other characteristics of travel that are important to this segment are not having to worry about driving and traffic, fun for children, fast way to travel, ability to move around, and having food and beverage service available. On the other hand, this segment is relatively unconcerned with safety, value, on-time arrival, being able to depart when they want to, and having a car available at their destination.

  Those seeking a **hassle-free experience** are more likely to be male (53%) than female (47%), 41 years of age (however, an above-average number are between the ages of 18 and 24), less educated, predominantly Caucasian (however, an above-average number are Hispanic), and moderately affluent.

  Those seeking a **hassle-free experience** represent the strongest potential ridership. They have the most favorable overall attitude toward riding Amtrak and are the most likely to say they would ride. Sixteen percent of this large segment is very likely to consider riding Amtrak for leisure travel. An additional 26 percent say they would be somewhat likely. This segment is the largest segment – 26 percent of favorable nonusers. Attracting this segment could have a significant impact on ridership.

  Overall, those seeking a **hassle-free experience** have the most positive attitudes toward train travel. However, in most cases, the travel characteristics they are the most positive about are not those that are most important to this segment. On the other hand, those seeking a hassle-free experience do not see Amtrak differently from other respondents in terms of some characteristics that are important benefits sought by this segment – I can get other things done while traveling, I can move around while traveling, there is food and beverage service available, you don't have to worry about driving / traffic, train travel provides a unique experience, and train travel is fun for children. These represent potential copy points when targeting this market segment.

- A second segment which offers potential for ridership are those looking for **comfort** and an **enjoyable experience**. They represent 18 percent of all favorable nonusers. Characteristics of travel that are most important to this segment include plenty of leg room, an enjoyable experience, travels along scenic routes, offers a smooth comfortable ride, leaves and arrives on time, and is a relaxing way to travel. This segment is willing to pay for their comfort and enjoyment, saying that cost and value are relatively unimportant attributes.

  Those seeking **comfort and enjoyment** are more likely to be female (61%) than male (39%), the oldest segment (average age is 48 years; 36 percent are 55 and older), retired, married with no children living at home, well-educated, predominantly Caucasian, and affluent.

  This segment has somewhat less positive attitudes toward travel by Amtrak. However, three out of ten say they would be somewhat likely to ride; 7 percent say they would be very likely to ride Amtrak.

  With the exception of being able to get up and move around while traveling, those seeking a trip that is comfortable and an enjoyable experience do not see Amtrak as being any more unique on these attributes than do other nonusers. It is important to work to position Amtrak positively on those attributes that are most important to this segment. Again these characteristics include plenty of leg room, an enjoyable experience, travels along scenic routes, offers a smooth comfortable ride, leaves and arrives on time, is a relaxing way to travel, can get up and move around when traveling, and you arrive at your destination fresh.

- The third segment which offers potential for ridership are those looking for a **trip experience** that is a **good value**. They represent 19 percent of all favorable nonusers. Characteristics of travel that are most important to this segment include it is fun for children, it is an inexpensive way to travel, it is a good value, it is a good way to travel with friends / family, it is a safe way to travel, there are package deals available, and it is an enjoyable or unique experience. Characteristics of travel related to comfort, flexibility, and speed of travel are unimportant to this segment.

  Those seeking a **trip experience with value** are more likely to be female (61%) than male (39%), 41 years of age (nearly three out of four are between the ages of 25 and 54), employed full-time (their spouse is also likely to be employed), married with children living at home, have at least some college education, predominantly Caucasian, and moderately affluent.

  Like those seeking comfort and enjoyment, this segment has somewhat less positive attitudes toward travel by Amtrak than do those seeking a hassle-free experience. However, one out of three say they would be somewhat likely to ride; 9 percent say they would be very likely to ride Amtrak. This segment is the most likely segment to say they have considered riding Amtrak.

  Those seeking a trip experience that is a good value have positive attitudes toward Amtrak on those attributes that are related to the trip experience that are important benefits for this segment, including train travel is a unique experience, it is a good way to travel with friends / family, it is fun for children, and it travels along scenic routes. However, they do not see Amtrak as clearly differentiated on other important characteristics, notably those related to value. Linking the uniqueness of the experience with a value proposition represents an opportunity to attract this segment.

This study was only recently completed by Caltrans and Amtrak West. Its full implications and the uses to which the data will be put are still being examined. However, all agree that the study has provided unique insight into a market that before was too large to be clearly understood and marketed to.

Source: *Survey of Nonusers, Caltrans / Amtrak West, September 1997.*

Long noted for its innovative approaches to marketing and marketing research, Tri-Met (Portland, OR) has used a variety of methods to segment its market. In 1993, they decided to try a new approach.

Before 1993, Tri-Met had always used demographic, geographic, and ridership behavior as ways to segment the market. In 1993, the agency started to look at the way they saw current and potential riders in a different way. To complement this traditional approach to market segmentation, Tri-Met decided to look at *attitudes* towards transit and how they might influence mode choices. Because attitude segmentation was new to Tri-Met, staff was unsure how it could be used by a public transit agency. "It took about 18 months to design and develop a research product that adequately demonstrated the applicability of this private sector tool to mass transit marketing," said Yvonne Lyon, Marketing Analysis Manager.

This process ultimately resulted in a telephone survey of 1,156 riders and nonriders to understand what motivates them to use or not use transit, the benefits they expect from transit, and the barriers that prevent them from riding. Six groups segmented by their attitudes about transportation were identified. Four groups of people were likely to increase their transit ridership and two were neither potential riders nor were they supportive of transit. Important variables found to influence transit use were county of residence, the number of vehicles per adult in the household, home ownership and income. Downtown employment, age, sex and marital status also had influence.

The survey results confirmed that nonriders were more likely to live in the suburbs and have no nearby service. This was one factor leading to Tri-Met's *Transit Choices for Livability* program – a program in which Tri-Met is restructuring suburban service. Similarly, research results suggested that the people in professional or technical occupations place higher value on *time control* over their lives while those in other fields value *service frequency* and *availability* more. Information such as this helped Tri-Met support more than 250 employers in their efforts to comply with Oregon's Employee Commute Option rule, mandating a 10 percent reduction of single-driver trips.

With success in applying the 1993 attitude / benefits segmentation, Tri-Met decided to do another study in 1997. Because of Westside MAX, the enormous growth in the suburbs, and Tri-Met's major restructuring of suburban services, the timing was right. To add sample cells for specific geographic and modal (e.g., MAX vs. bus riders) splits that were large enough for statistical reliability, Tri-Met more than doubled the number of respondents, from 1,156 to 2,600.

In the 1997 study, Tri-Met focused on characteristics that are strongly related to ridership. For example,

- Among *people with pro-transit attitudes,* (1) having fewer than one car per adult in the household and (2) not having to transfer were found to have the greatest positive influence on ridership.

- *Potential rider segments* tend to include Multnomah County residents, singles, urban dwellers, renters, people under 25, and commuters. (These groups may overlap.)

- Among *commuters*, those most likely to ride tend to work in downtown Portland (where they would otherwise have to pay for parking) as skilled craftsmen or in clerical or service occupations. They tend to have a high school education and live within a half-mile of a bus stop or rail station.

The following tables summarize the main characteristics and tendencies of six discrete Tri-Met market segments identified in the 1993 and 1997 studies. Groups One through Four are considered potential markets — they represent three-quarters of Tri-Met's riders and overall population. Groups Five and Six are not considered potential riders, yet they represent about one-fourth (24%) of residents and are a part of the population Tri-Met serves.

FOUR POTENTIAL-RIDER GROUPS	
1997	**1993**
1 "Society must change its attitude toward cars and I look for ways to do my part." *18% of total; 37% of riders* Group 1 respondents are strongly pro-bus. They feel that we have to change our attitude about using cars and have changed their behavior to help the environment. Unconcerned with the transit's inconveniences, they have concerns about their personal safety. They are likely to be female, from Multnomah County, well educated and younger. They have the highest transit ridership – 49% rode 2+ times in the past month.	***1 "I can't get enough of that bus."*** *23% of total; 40% of riders* Group 1 respondents are strongly pro-bus. They feel that bus riding is convenient, relaxing and non-polluting. They also give Tri-Met higher than average performance ratings and see transit as a solution to the traffic problems caused by growth. This group is especially likely to be well educated, female, urban, and renting their homes. Most who have ready access to transit are already riding – 56% rode 2+ times in the prior month.
2 "We have to change our attitude toward cars but I still want something fast and convenient." *19% of total; 22% of riders* Group 2 respondents recognize that people have to change attitudes about how they use cars and are willing to take public transportation, if convenient. Things that bother others about the bus do not bother them, though getting around quickly and not having to wait is important to them. Safety on the bus or at bus stops is a non-issue for these people. Group 2 is predominantly male, well educated, with few low- income members. They ride frequently – 27% rode 2+ times in the past month. However, few commute by transit.	**2 "Transit is okay but driving fits my lifestyle better."** *16% of total; 17% of riders* While Group 2 respondents are frequent Tri-Met users — 34% rode 2+ times in the past month — they use Tri-Met only when it is very convenient. A lot of things that bother other people about the bus do not bother them, but neither are they attracted by transit incentives such as pass subsidies or avoiding traffic. Group 2 respondents have a positive attitude toward Tri-Met but use whatever transportation best fits their schedule. Group 2 is predominantly male, high income, well educated, white collar, employed and urban.
3 "The traffic is getting so bad I don't like to drive so I wish I had better alternatives." *18% of total; 20% of riders* People in Group 3 are very concerned about the increase in traffic caused by growth and are bothered by congestion and parking problems. They don't mind transferring but don't feel safe taking the bus. Many attitudes are timid – they don't mind the bus but have reservations, speed is more important than cost but not a lot more. Group 3 has more females, is less educated and is less likely to be from Multnomah County. They ride frequently – 25% rode 2+ times per month.	**3 "I'm not comfortable riding the bus, but it is the best option I have."** *18% of total; 20% of riders* People in Group 3 are uncomfortable driving in heavy traffic or looking for parking. Transit offers an alternative to driving and 36% rode 2+ times in the prior month. Group 3 members are especially concerned about personal safety and comfort, and many have complaints about transit. Group 3 is predominantly female, with lower incomes and less education than average. These respondents are also the most likely to be transit dependent.
4 "I know we'll have to change our attitudes about how we use cars but I'm not sure I'm ready yet." 17% of total; 8% of riders While this segment is pro-bus in many of its attitudes, most Group 4 respondents will ride the bus only if they have to because the traffic is not yet bad enough and public transportation is not yet convenient enough. Safety is the major drawback of the bus with the majority concerned about personal safety when riding or waiting for a bus. Group 4 respondents tend to be married females with children. Many live in Washington County with proportionally fewer in Clackamas. About one in ten (11%) rode 2+ times in the past month.	***4 "I know riding Tri-Met is the right thing to do, but I just don't have the time."*** 20% of total; 12% of riders Group 4 is supportive of Tri-Met and sees social benefits to using transit. Speed, convenience and safety are also very important to them and transit is seldom seen as a better alternative than their car. They tend to like MAX better than the bus, and use transit for special events such as Rose Festival or Blazer games. Group members are typically suburban residents who have less access to transit and do not commute to downtown Portland. About two in ten (19%) rode 2+ times in the prior month.

TWO LOW OR NO POTENTIAL-RIDER GROUPS	
1997	**1993**
5 "I love my car and I don't see any reason to change." *12% of total, 7% of riders* People in Group 5 are attached to their cars and disagree that society is going to have to change its attitude about cars. They are not bothered by traffic congestion or parking, nor concerned about the traffic impacts of growth. They don't mind unfamiliar situations but they don't like the inconveniences of the bus. Group 5 is predominantly male, with high incomes, living in Multnomah and Washington County. They have low transit ridership (12% rode 2+ times in the past month.)	***5 "Riding is not going to save the world"*** *11% of total, 8% of riders* People in Group 5 do not see the social benefits of using public transportation. Speed, convenience, safety and comfort on trasit are not issues with Group 5. Instead, they just do not see transit as a solution to transportation problems and have a skeptical attitude toward Tri-Met. Group 5 respondents tend to be older, middle income, long term area residents. The transit riders in Group 5 (24% rode 2+ times in the prior month) tended to ride Tri-met for work or when they could not use their cars.
6 "I'd only take the bus if I had to." *16% of total; 6% of riders.* Nearly everyone in Group 6 said that they would only take the bus if they had to. There are a million reasons why they do not like the bus — they don't like the inconveniences; they are uncomfortable in new situations or being around people they do not know; and the bus makes them nervous about their personal safety. Group 6 respondents are more likely to be female, older and younger than average, have lower incomes, and tend to be the least educated of the groups. They have low ridership — 8% rode 2+ times in the past month.	***6 "Nothing is going to get me on that bus."*** *13% of total; 3% of riders.* Group 6 respondents are strongly negative toward public transportation and most said they would only take the bu if they had to. Convenience and control of their own schedule is highly important. They perceive the bus as slow, unsafe and uncomfortable. They have a poor impression of Tri-Met, though most actually know little about the service available to them. Group 6 respondents tend to live in the suburbs and be blue collar and clerical workers. They have low ridership — 7% rode 2+ times in the prior month.

Two other changes were made in research design from 1993 to 1997. Geographic analysis focused on seven areas based on zip code. Modal analysis compared those riding only MAX with people who ride the bus only or ride both the bus and MAX. With the larger sample size and the addition of the geographic and modal elements, Tri-Met can study well-defined but smaller sample cells, such as senior citizens in specific areas, to see if there are significant differences and whether there should be a separate marketing effort directed toward seniors. For example, Tri-Met found that residents near the new Westside MAX tend to be suburban families with children, and the parents work outside of Portland. Their pre-MAX transit use is low and they do not (yet) see Tri-Met as a convenient alternative.

To integrate what was learned in the 1997 segmentation study, Tri-Met plans a staff workshop to discuss the results and their application to different departments. Before long, the results will be in marketing materials and "on the street".

By their openness to using private-sector techniques such as market segmentation in the introduction of rail and suburban services, Tri-Met's employees and directors show leadership and community spirit. They are making a measurable difference.

Sources: *Market Segmentation Study for Tri-County Metropolitan Transportation District of Oregon,* October, 1993.
Market Segmentation Study for Tri-County Metropolitan Transportation District of Oregon, October, 1997.

Benefits

Benefit segmentation is found to provide the marketer with a new perspective and added insight into market situations. When properly executed, this approach is widely acknowledged as one of the best ways to segment markets. Some of the advantages of benefit segmentation are:

- Benefit segments are based on reasons consumers buy. As such, relationships between motivations and purchasing patterns in specific situations are presented.
- It is an appropriate segmentation base in many types of situations. It has been found useful for consumer and industrial products and has been used by services. As the example shows, it has been adopted in the public sector as well.
- Unlike other market segmentation bases, benefit segments are based on causal factors rather than descriptive factors. Since benefits recognize why people buy, their purposes and product desires, a direct, or cause and effect, relationship exists between motivations and purchasing patterns.
- Benefit segmentation is a method with great flexibility.
- Benefit segments can be identified through a variety of techniques, including but not limited to focus groups, the Delphi approach (a group of expert opinions), in-depth interviewing, and quantitative research (mail surveys, telephone personal interviews). Analytical methods for forming benefit segments can span the gamut from basic tabulation of opinion to advanced multivariate analysis.
- Common or custom segmentation classifications can be used in the segment.
- Benefit segmentation can be used in conjunction with several other closely related segmentation bases / variables, including product / firm loyalty, psychographics, perceptions, preferences, purchase intention, and purchase situations / occasions.[16]

Limitations

In some respects, the limitations of benefit segmentation resemble those of psychographic research – namely, problems in data collection and analysis, and cost factors. Other limitations include:

- Benefits must be identifiable and not abstract.
- Market segments must be recognizable and accessible to an agency's marketing or service strategies.
- Costs can be exceedingly high in obtaining the services of trained specialists to conduct the analysis. However, benefit segmentation is generally a less expensive technique than psychographic segmentation.
- Finally, the effectiveness of benefit segmentation is limited by the reality of the situation. While individuals may seek certain rational benefits from a product in the marketplace, they sometimes do not respond as they indicate they will, and may deviate from their expected purchasing behavior.

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[16] Weinstein, Market Segmentation.

Summary

Two basic approaches to market segmentation are...

- Pre-determined (*a priori*) segmentation – selecting certain groups from a population based on known characteristics and declaring them "segments".
- Market-defined (*post hoc*) segmentation – identifies segments based on actual market investigations, notably analysis of answers to survey questions intended to predict marketplace responses.

Physical Attribute Segmentation provides important information about individuals within specific markets. Segmenting markets by these physical dimensions is a logical starting point because. . .

- The data is relatively easy to obtain.
- It is generally less expensive than other forms of segmentation research.
- It provides a quick snapshot of a market.
- Populations can be sampled and accurately projected to represent characteristics of the entire market.
- The information gathered can be of great value for decision-making.
- The data corresponds to other available data and information for decision-making.

The most common bases for Physical Attribute Segmentation are. . .

- Geographics,
- Demographics, and
- Geodemographics.

Data for Physical Attribute Segmentation is available through. . .

- Published sources (e.g., the Census).
- Syndicated services.
- Primary research conducted by the agency.

Product Usage Segmentation is particularly applicable to transit. It involves. . .

- Segmenting based on ridership – notably frequency of ridership.

Segmenting markets based on product usage provides five major benefits:

- It is a useful dimension for understanding transit markets based on past behavior.
- It can be used to identify strategies to retain frequent riders.

- It can be used to identify strategies to increase consumption among infrequent or occasional riders.
- By providing additional benefits or focusing in on neglected market segments, it is possible to convert nonriders to riders.
- Unlike psychographic and benefit segmentation, segmenting based on product usage is generally easy to implement and requires less complex analysis. It is also less expensive.

Shortcomings of Product Usage Segmentation include. . .

- Product usage segments are often difficult to explain through demographics only.
- There are inherent problems associated with targeting the frequent rider segment.
- There are some definitional problems in product usage analysis.

Psychographic Segmentation is. . .

- The practical application of behavioral and social sciences to marketing research.
- A quantitative research procedure that is indicated when demographic, socioeconomic, and user / nonuser analyses are not sufficient to explain and predict consumer behavior.
- Seeking to describe human characteristics of consumers that may have bearing on their response to products, packaging, advertising, and public relations efforts. Such variables may span a spectrum from self-concept and lifestyle to attitudes, interests, and opinions, as well as perceptions of product attributes.

Psychographic research represents a major step forward in marketing research as it is oriented toward understanding the total human being as he / she goes through the purchase decision-making process. Segmentation based on psychographics has proven to be most useful in. . .

- Identifying target markets.
- Better explaining consumer behavior.
- Improving an agency's strategic marketing efforts.
- Minimizing the risks for new products, services, or other ventures.

Problems with Psychographic Segmentation include. . .

- Problems in data collection and analysis.
- Cost.
- No guarantees that it will work.

Psychographic Segmentation **always** requires primary research.

Benefit Segmentation is based on the belief that the benefits that people seek in consuming a given product are the basic reasons for the existence of true market segments.

- Benefits are the sum of product advantages or satisfactions that meet an individual's needs or wants.
- They extend beyond product features and serve to satisfy physical, emotional, or psychological needs.

Benefit segmentation is found to provide the marketer with a new perspective and added insight into market situations. When properly executed, this approach is widely acknowledged as one of the best ways to segment markets.

Some of the advantages of benefit segmentation are:

- Benefit segments are based on reasons consumers buy.
- It is an appropriate segmentation base in many types of situations.
- Benefit segments are based on causal factors rather than descriptive factors.
- Benefit segmentation is a method with great flexibility.
- Benefit segmentation can be used in conjunction with several other closely related segmentation bases / variables.

Limitations of Benefit Segmentation include:

- Similar to those for Psychographic Segmentation (data collection and analysis, cost).
- Human behavior – people don't always respond the way they say they will.

Benefit Segmentation **always** requires primary research.

Chapter

3

Using Planning & Research to Segment Markets

A Practical Approach to Market Segmentation

How do you introduce or improve segmentation procedures and activities at your agency? Effective and cost-efficient segmentation analysis requires the following inputs:

- **Superior planning** – A managerial framework emphasizing planning and research guidelines leads to effective segmentation studies.
- **Solid research** – Choosing the optimal blend of primary, secondary, syndicated, and data base sources.
- **Selecting the "right" segmentation dimensions** – As detailed in the previous chapter, these include geographics, demographics, usage and other behavioral measures, benefits, and psychographics.
- **Strategy development** – Target market selection, positioning, nichemanship, and formulating the proper marketing mix based on product, pricing, promotional, and distribution elements.
- **Implementation and control** – Working, evaluating, and revising the segmentation plan.

Chapter 3 focuses on the first three elements of segmentation analysis. Each major section of this chapter is divided into two parts:

- An **overview of the topic**, providing key definitions, procedures, and guidelines for implementing a segmentation analysis. It is not the purpose of this handbook to provide a detailed reference on conducting market research. The focus instead is the application of market research methods in a specific situation – that is, conducting market segmentation analysis. Other references, including the handbook developed for TCRP Project B-2 – *Integrating Market Research Into Transit Decision-Making*, are available that will provide the reader with specific information on conducting market research that is applicable here.
- An **illustration** of an actual implementation of segmentation analysis using three case studies as examples.

Our Case Studies – Some Background

A major part of the effort behind this handbook was the conduct of an actual segmentation analysis of transit riders and nonriders using many of the basis variables described in the previous chapter. It was believed that conduct of such research would provide considerable insight into the applicability of market segmentation specifically in the transit industry. Four criteria were used to select agencies to participate in this research effort.

- Agencies must be of different size (small, medium-sized, and large urban), offer different modes (bus only and rail), and operate under different marketing and service planning philosophies.
- Agencies must have a sizable number of existing riders who are choice riders. In addition, the makeup of the market should be diverse. At least one market should include a university system, as college students have recently represented an important market opportunity for many systems.
- All must have conducted some research in the past. That is, a major segmentation study of the type proposed should not represent their first research effort.
- All must demonstrate a market-orientation in their approach to research, marketing, and service planning. Moreover, all had to be open to the possible use of market segmentation strategies in future marketing or service planning efforts.

The three transit agencies selected for the research effort were Washington Metropolitan Area Transit Authority (WMATA), Milwaukee County Transit System (MCTS), and Boise Urban Stages (The BUS). Following are descriptions of each agency's background. They "set the scene" for the results from this segmentation analysis.

The Milwaukee County Transit System's 535-bus fleet serves Wisconsin's largest county (242 square miles) with regular, shuttle, express, flyer, university, school and special buses. About 90 percent of the 965,000 residents live within one-quarter mile of service. Two-thirds of the 1,400 employees are bus operators, who collectively drive 20 million miles per year picking up close to 50 million passengers. For MCTS (as well as the average transit system nationwide), 1997 ridership is about 4 percent higher than 1996 levels. The base fare was last increased in January, 1996 to $1.35.

Although Milwaukee area commuters have a short work-travel time (20 minutes), up to 11 percent of workers use public transportation, ranking Milwaukee County 23rd of all U.S. counties (with New York 1st at 53 percent). With 70 rush-hour, 40 midday and 30 weekend routes, MCTS has a commitment to commuters and other choice and transit dependent riders.

Although Milwaukee County has neither gained nor lost population in the past fifteen years, neighboring counties have experienced double-digit growth. The City of Milwaukee, population 620,600, is the nation's 17th largest city and has lost about 1 percent of its population in the last five years.

Heavy industry and the skills of an immigrant labor force forged Milwaukee's economy over five generations. Milwaukee was the "machine shop of the world" and is still home to A.O. Smith Corp., Briggs & Stratton Corp., Allen-Bradley Co. and Harley-Davidson, Inc. Of the nation's 36 largest metro areas, Milwaukee ranks third (after San Jose and Detroit) in the percentage of its workforce in manufacturing. Milwaukee produces 11 percent of the nation's malt beverages, but less than 1 percent work in a brewery such as Miller Brewing Company. Today, however, the *service* sector employs more people than manufacturing (30% vs. 22% of the workforce, respectively). In the past five years, the service sector added 54 percent of all new jobs created; the manufacturing sector added 18 percent.

If its smokestack industries are declining, Milwaukee is still a factory town with stable union wages and comfortable blue-collar lifestyles that include casino gambling and a cottage "up north." Although the African-American population has grown, Milwaukee County remains a predominately white, middle-class industrial center with a strong German and Polish heritage. "Consumers here drink domestic beer, drive American cars, and belong to bowling leagues at some of the steepest rates in the nation," said Michael Weiss in *Latitudes and Attitudes.* Yet, "many baby boom adults tend to join health clubs, see a lot of movies, and watch TV sports."

While 60 percent of Milwaukeeans were born there and 90 percent have lived there for ten or more years, many move *within* the area: 47 percent live in a different house than they did five years ago. Just over half (52%) of households are owner-occupied; 48 percent are renter-occupied, with an average rent of $418. The median household income is $28,000. About 31 percent of the county's households are single-person households and 37 percent are one-parent families; thus, *two-thirds* of Milwaukee County's 373,000 households have either an adult living alone or a single parent with no other adult.

The 1996 unemployment rate was below 4 percent, lower than the national average. The majority of business leaders (74%) responding to a Metropolitan Milwaukee Association of Commerce survey said that their top concern was finding qualified workers. The impact on business of the new state welfare-to-work ("W2") program was a concern as well, because the private sector will be called on to provide jobs, training, and support. Transit officials mentioned this as an opportunity to serve.

In 1991, MCTS conducted a rider opinion / market segmentation study about safety, service availability, cost and driver courtesy. Grouped by geographic area, the clusters of frequent and occasional riders helped in introducing and evaluating new routes. For example, two new routes in "pro-transit" areas ranked 4th and 12th in ridership. But when service began in a "least-likely" area, ridership for that route ranked 34th.

MCTS conducted a rider survey about its operations in 1994, distributing questionnaires at pass outlets. MCTS conducts focus groups as needed; has a quarterly customer satisfaction survey; and participated in a regionwide research and marketing initiative coordinated by the Wisconsin Department of Transportation.

MCTS is recognized for its quality service, management, and marketing that emphasizes convenience, reliability and economy. Executives at MCTS are clear in their mission: *"We're a service." "It's the bus on the corner on time." "It's convenient for riders." "It works for people without a car."* Their 1998 – 2002 Service Improvement Plan calls for accessible, convenient, efficient service that supports land use plans and essential economic, educational and social activities, while minimizing costs.

The 25-member Milwaukee County Board of Supervisors governs MCTS. "Managing relationships with officials" can dominate the day's concerns at the transit office. Although the local share of MCTS operations is provided by the Milwaukee County property tax (which, for the property owner, can be $3,000-$4,000 for a house worth $100,000), transit managers said "lack of funding" was a challenge; achieving dedicated funding (away from the property tax) was their goal.

MCTS projects for 1997 included rerouting and marketing to accommodate the repaving of the I-94 expressway, a paratransit initiative, a new automated phone system, a state-of-the-system report, a five-year plan; new services and passes including employer-sponsored services, and marketing projects. MCTS planned to begin using the 1997 market segmentation data with its I-94 marketing campaign, in casting the riders for their TV spots.

Washington D.C.'s Metro operates 764 rail cars and 1,284 buses in the District of Columbia and neighboring Northern Virginia and Maryland (in Virginia: Arlington and Fairfax Counties, and the Cities of Alexandria, Falls Church and Fairfax City; in Maryland: parts of Montgomery and Prince George's Counties.) Metro's 8,400 employees provide transportation for the service area population of 2.5 million. By 2020, the Metro service area is expected to have one million more residents.

In 1997, Metrorail recorded over 148 million boardings at their 80 stations. With 106 million passengers boarding Metro's buses, these unlinked trips total 254 million boarding passengers for the year. Average weekday ridership is 510,000 rail and 352,000 bus passengers. Rail ridership is increasing and Metro's parking lots are full. But along with federal reductions in the workforce – in one year, the area lost 30,000 jobs – Metrobus ridership is declining. But not to worry. In 1997 there were two million jobs and four million people in Washington's larger metropolitan statistical area, but by 2020 there will be three million jobs (primarily in public administration, business and education) and 5.5 million people in the MSA. The need is there. A recent Federal Highway study ranks the region first in the country in the per person cost of wasted fuel and time from traffic, and predicts a 70 percent increase in vehicle miles traveled by 2020.

The area is characterized by "affluent metropolitan sprawl and racially diverse singles," age 25 to 44, who tend to be liberals and consumer advocates, according to Michael Weiss in *Latitudes and Attitudes*.

Washington residents stand near the top when it comes to *brains* (two out of three went to college); *bucks* (half of households earn more than $50,000 a year); *workaholics* (there are more two-career couples here than anywhere else); and *fitness* (they have high rates for exercising, jogging, tennis and skiing.) Although the area has many young singles drawn to the dozen area colleges and high-glamour-low-pay Capitol Hill jobs, the area takes its character from its affluent suburbs, where residents splurge on half-million-dollar-plus homes (three times the U.S. average) and drive luxury cars.

The $50,000 median *household* income is nearly twice that of Boise or Milwaukee, the other two areas surveyed. As for the affluent suburbs, Arlington County, for example, is 6th highest in the nation for *per capita* income ($26,000 vs. the U.S. average of $14,400) and is 3rd of all U.S. counties for the highest percentage of adults with a bachelor's degree (52% versus 20% for the nation.) The average Commuter Store customer in Crystal City has a household income of $60,000.

Residents tend to take public transit or carpool to work. "The District" (as many locals say) is 5th highest and Arlington County is 12th highest in the nation, with 49 percent and 39 percent of workers, respectively, commuting by rail, bus or rideshare. In addition to commuters, Metro also has the responsibility of communicating with the area's many visitors and new residents from all over the world. For example, one in five (21%) residents living in Arlington County was born outside the U.S.

The popular Metro rises to the challenge, according to the area's community leaders who said the rail service was *"great. . . great"* and *"nothing works better in Washington than the Metrorail system."* Metro won the American Public Transit Association's 1997 Heavy Rail Award for creative ridership programs, joint development, security, innovation, construction programs, and impact on the regional economy. Speaking of economic impact, if not for Metrorail, an extra 26 highway lanes would be needed. According to the Urban Land Institute, Metrorail generated $15 billion in additional development in the region. As for housing, a dwelling within walking distance of the Ballston station costs $100,000 more; and there is new, top quality streetscaping nearby. Turning to Metrobus service, it is considered "pretty good" by community leaders, who added, "but people don't know how good it really is." They wanted improvements such as timed connections and fast, frequent, direct service with memory headways.

Metro staff regularly works with its jurisdictions and connecting services such as Virginia Railway Express, MARC Commuter Rail Services, Alexandria's DASH, and the Fairfax County Connector. They work with employers and major destinations, such as the Pentagon (with 30,000 employees) and National Airport, to everyone's benefit. Now, for example, with the 1997 opening of the new National Airport Terminal, the Metro platform is adjacent and on the same level.

WMATA has the most sophisticated market segmentation research in the transit industry nationwide, with several related projects in the past five years. The most-likely-to-ride groups from the 1993 Gallup study and the 1997 study documented in this report share strong defining characteristics. "Metro enthusiasts" from the 1993 study tended to be younger, single males, many of whom were working full-time, and often worked late. They tended to be active and first to try something new. Nearly half were already riders who viewed Metrorail and Metrobus favorably. Unfortunately, they really wanted to buy a car, and when they did, tended not to ride the bus again.

This led staff to wonder about aiming marketing messages to attract this group when they tend to quit riding permanently as soon as they get a car. It's an important question, particularly since this 1997 work describes the same potential rider group. Strategies to consider include *not* letting them go (contacting them at home); assuring them it's okay to postpone getting a car (e.g., "a car costs more than you think"); and selling an asset such as the span of service, to this group who works late ("Ride anytime up to midnight"). While this group tended to take risks, the idea is not to portray riding Metrobus as risky but rather to consider media such as MTV or approaches that *attract these young adults*, versus images, marketing messages or media that feel safer for a government agency.

Boise Urban Stages' 36-bus system serves Idaho's capital city with fixed routes and paratransit. The largest metropolitan area for 300 miles, Boise has retained its stately, yet village-like character with historic buildings including the domed Capitol built in 1912, and a 25-mile greenbelt along the Boise River. Cradled by rounded, desert-like hills, Boise is a center for agricultural trade, education, technology and government. It is home to Boise State University and three other colleges, a zoo, 55 parks, a summer-long Shakespeare Festival, an art museum, opera and ballet companies. In addition to state and local government, major employers include Hewlett-Packard, Micron Technology, and St. Luke's Regional Medical Center.

The population of 148,000 is predominately white (96%) and living in "family" households (65%). If enrollment in the public school system is an indication of public confidence, Boise enjoys high rates of approval with 93 percent of elementary and high school students in public schools. (In comparison, Milwaukee's rate is 81%.) The median age is 32. The median annual household income is $29,000. According to Michael Weiss in *Latitudes and Attitudes*, moderation, family values, financial investments and less government are "in." Music is country. Joining business, veteran and fraternal order groups at high rates, people in Boise also enjoy more individual pursuits such as fishing, hunting and skiing. The nearest skiing is only 16 miles from Boise.

Although the average work trip is eight miles, growth patterns are suburban and transit service will be moving from a radial to a hub system. Although THE BUS now operates only within the city limits, the *Community Vision for Transit* and the *Regional Public Transportation Plan 2015* call for service throughout its home Ada County (which is expected to grow from 201,000 in 1990 to 360,000 people by 2015) and to neighboring Canyon County, with a fleet of 158 buses serving six million riders a year. Managers at THE BUS said their challenge is to "sell, fund and plan the *Community Vision*." They have a good head start: citizen advocacy groups support transit and promote alternatives to building more roads and bridges, and highway officials realize they cannot meet the demand for increased roadways. They are already working with THE BUS on travel demand management.

Operated by Transportation Systems Management of Idaho Inc., a subsidiary of McDonald Transit Associates of Ft. Worth, Texas, THE BUS carried 1.2 million passengers (in unlinked trips) more than 900,000 miles in its 46-squre mile service area during 1996. Due to targeted marketing and custom service for St. Luke's, Boise State and the school district, ridership doubled the last few years. It is leveling off in 1997, although demand-response ridership continues to grow. The fleet replacement program has reduced the average age of vehicles (from 14 to 6 years) and operating costs, yet vehicle service miles have increased 15 percent in the past two years.

THE BUS is committed to hiring nice people and has a customer focus in training for its 68 employees, who have authority to make decisions otherwise reserved for supervisors. For example, drivers may give tokens to new riders who don't have the correct change, they may make route deviations for passengers by simply letting the dispatcher know, and they contact the dispatcher when riders will be transferring at the downtown pulse. With mobile radio in hand, the dispatcher may leave the office to take a passenger home in case of a missed connection. These courtesies have led to highly satisfied customers and widespread community support.

Public involvement opportunities and market research have included stakeholder interviews, meetings with neighborhood groups and major employers, regional public meetings, a steering committee for long-range planning, focus groups, telephone and on-board surveys.

Approaching Segmentation: First Considerations and Steps

The First Necessity: Managerial Involvement

To work most effectively, **market segmentation should serve as an essential element in an organization's strategy**. To assume this role, segmentation must have support from the very top of the organization. This must then follow through most of the organization. For instance:

- The agency's marketing organization must be able to execute alternative marketing and/or service strategies.
- The agency's financial department must be able to vary pricing.
- Operations must be able to vary and/or change existing route structures.
- Service Planning must be able to execute variations of basic service plans.
- Finance must be able to report costs and margins by market segment.
- Market research and analysis must be able to monitor and measure rider and nonrider response and provide feedback to the organization by market segment.

Moreover, to succeed, market segmentation requires constancy and consistency to work properly. It is anything but a "one time deal." Rather, it is a continuing process of applying segmentation throughout the organization.

These considerations make it plain that market segmentation requires top management buy-in and support. While marketers and/or market researchers may present the concept of segmentation to management or actually perform the necessary research, the final decision on most segmentation studies must, in most cases, come from an organization's top management.

So how do you get management involved at this level? Nobody has yet devised a foolproof, systematic approach to achieving management buy-in and support. Top management in the organization must have some degree of willingness to undertake segmentation before the subject ever gets broached with them. Even in those cases where the directive to segment the market comes from "on high," there is no guarantee that the project will be well received by the time it gets done.

Creating a sense of ownership and involvement by top management is crucial for the acceptance and use of segmentation results. In too many cases, marketers and/or researchers finally win approval – sometimes grudgingly and only after months of personal "selling" to upper management – and then disappear until the findings come out. By then, top management may not have a good sense of what the project intends to find – and may even find it hard to believe that they agreed to do it in the first place. In the worst case scenario, the management body that agreed to do the study is no longer in place. You can bypass this problem in two ways:

- First, keep management informed about segmentation studies.
- Second, and as much as possible, involve them in any decisions along the way.

While not a typical research effort, it was essential to have top management at each of the agencies involved in the demonstration project. Following is a description of some strategies used to get and keep management at the three transit sites involved in this effort.

"**MCTS gained momentum** with several previous research projects. The information from the research stimulated management's thinking. Overall, consumer research was useful in understanding aspects of our mission, such as service quality. In pricing, for example, MCTS designed a corporate pass based on what CEOs and CFOs said in focus groups and personal follow-up interviews.

We knew the TCRP segmentation study would help in creating messages and understanding where potential markets are. This study would help bring ideas from our market forward to develop good products. Because of the usefulness of prior research, our previous successes paved the way for this work, so it really wasn't hard to convince our top management to participate. A goal in our marketing plan is to assist our organization to be research- and market-driven." *[Milwaukee County Transit System]*

"**While much of the cost of this research was borne by TCRP funding**, all participating agencies were required to pay for all direct costs of conducting the interviews in their markets, exclusive of the actual costs of data collection – that is, interviewing costs. It was estimated that these costs could range from $10,000 to $15,000 per agency. Thus, it was initially important to "sell" the idea of participating in this research effort to the top management at the three participating agencies. To accomplish this "sales" effort the project team employed a tried and true strategy that has proven effective in gaining internal support for research in many other situations. An "advocate" was identified at each agency who was provided with the support and tools to present the advantages of participation to the management at each agency. Following is the message one "advocate" took to their management.

"We convinced management of the value of participation. We were able to demonstrate the value based upon prior experience with marketing research. Moreover, in the past we had paid up to $50,000 for what we were going to get for $15,000. As information is a powerful tool, this represented a great value. Finally, the inclusion of the "training" component for staff represented added value." *[WMATA]*

"**Having just received an award as the 'Outstanding Small Transit System' at APTA**, it was a natural follow-up to our past research and marketing efforts to understand more about the different markets for transit services here in Boise. Up to now, Boise Urban Stages has followed an approach of 'being all things to all people.' With our rapid growth in population without corresponding growth in resources, a more targeted approach to marketing public transportation may be needed." *[Boise Urban Stages]*

Once the research was completed, a second strategy was employed to encourage management buy-in and to assist the agencies in using the research. Members of the project team gave a one-day workshop at each system. Project team members presented the results of the research as it applied to the individual system. The workshop was interactive in nature and participants were encouraged to bring challenges and opportunities facing their agencies to the table to illustrate how the research results might be applied. Systems were then given "homework" assignments to encourage them to use the results of the research in upcoming projects.

Cost Considerations in Segmentation Studies

Market segmentation studies are typically larger in scope than the market research efforts many transit agencies have traditionally conducted. Moreover, they are often more complex, requiring outside assistance – often from custom research firms that you may not have used before and/or who may be located outside of your immediate market area. Moreover, as noted above segmentation studies require greater involvement of resources and staff throughout the agency. All too often, the amount of staff time required for certain aspects of a segmentation study is grossly underestimated.

There are five primary components of costs to consider in a segmentation study. The first stage – **Problem Definition** – covers the time and costs involved in determining the purpose and objectives of the research. In addition, the basic parameters of the research effort – for example, the bases for market segmentation and the development of a model or assumptions – are defined. Depending on the complexity of the problem and who is involved in the process, the costs for Problem Definition can run from as little as $1,000 up to $10,000.

The second stage – **Research Design** – covers the time and costs associated with the actual design of the research effort. Costs included here are the costs and time involved to agree upon the final research design, the costs of selecting and contracting with an outside supplier if required, the costs of pretesting the design, and costs and time associated with redesigning the study based on the pretest. The extent of pretesting required, as well as the use of outside suppliers, can greatly impact the costs at this stage. Plan to spend as little as $2,000 to as much as $10,000 at this stage.

The third stage – **Data Collection** – is typically the most costly stage in the process and is affected primarily by sample size, interview length, method of data collection, and the Effective Study Incidence (or the incidence of qualified respondents in the sampling frame or in the general population). While costs here can range from as low as $10,000 to over $100,000, average costs are more likely to be between $30,000 and $60,000 (for sample sizes ranging from 1,000 up to approximately 2,500 interviews).

Costs in the fourth stage – **Data Analysis** – are largely affected by the nature of analysis that is to be conducted. Simple tabulation is relatively inexpensive – costing as little as $1,000 – and is typically seen with market segmentation efforts using *a priori* bases for segmentation or in tracking studies. If this is the first market segmentation study you have conducted, or if a post hoc basis for segmentation is employed, costs for Data Analysis are generally higher and can run as high as $20,000 to $30,000 if there is extensive use of outside services or if a standardized model such as VALS is used. Plan on spending between $5,000 and $15,000 here.

It is nearly impossible to put any range on the cost of **Implementation** – the last stage. However, in determining the value of a segmentation study, it is important to consider how the results are likely to be used. The costs and risks associated with the nature of the decisions that will be based on this research provide a good mechanism against which to evaluate the expected value of this type of research effort. A $60,000 research project should not be authorized if it is likely that the study will only provide $30,000 worth of answers. However, if one examines the costs and risks associated with major service changes or an expensive marketing communications and promotions program where hundreds, thousands, or even millions of dollars may be expended with a great deal of uncertainty, a $60,000 research project that reduces that uncertainty is likely to have much greater value.

The following table further illustrates some of the factors that will affect the true costs of a segmentation study during each of these stages:

Stage	Factors Affecting Costs
Problem Definition	▪ Senior management's involvement ▪ Research staff's time and effort ▪ Outside consulting as required (e.g., about basis variables and model development)
Research Design	▪ Using staff versus outside suppliers to design and perform the study ▪ Sample design – notably sample sizes and procedures to address marketing questions and to insure projectability of the results to the population ▪ Organizational demands for testing reliability and/or validity ▪ Steps needed to develop the survey instrument, including the extent of pretesting and analysis of the pretest data that will be required
Data Collection	▪ Interview method – e.g., phone, personal interview, or some other method ▪ Interview length ▪ Interview recruiting procedure ▪ Incidence of target population ▪ Sample size ▪ Supervision requirements ▪ Editing and coding requirements
Data Analysis :	▪ Segment determination and profiling ▪ Use of modeling or simulations ▪ Computer software and/or hardware requirements ▪ Need for outside assistance with analyzing data and interpreting results ▪ Reporting and presentation requirements
Implementation	▪ Senior management's involvement ▪ Research staff's time and effort ▪ Other staff time and effort ▪ Outside consulting if necessary (e.g., about basis variables and model development) ▪ Direct costs (e.g., media, production, etc.)

Getting Outside Assistance

A final consideration before beginning is deciding whether or not to use outside assistance in designing, implementing, and evaluating a market segmentation study. As noted above, this type of research is often more complex than the ridership studies, customer satisfaction surveys, or even awareness and attitude studies your agency may have performed in the past. In most cases, it is advisable to use a skilled marketing research firm or marketing consultant in the project. Some organizations have also relied on the advice of university faculty. It is beyond the scope of this handbook to provide details on where to find and how to select marketing research firms or consultants. However, following is a checklist of twenty important questions to ask your research supplier before contracting for a market segmentation study.

- ✓ Does the research firm have experience in public transportation or is their experience in other markets applicable to public transportation?
- ✓ How do they view the purpose of the project?
- ✓ From a research perspective, what is involved in this segmentation study – in what specific areas will you need the most assistance?
- ✓ Will the research company work closely with you in the project?
- ✓ What types of primary and/or secondary segmentation bases have they advised?
- ✓ Have they considered all appropriate bases and variables?
- ✓ Will secondary or syndicated data and/or physical attribute dimensions be used?
- ✓ What data collection methods will be employed?
- ✓ Will the survey instrument be pretested?
- ✓ What size sample will be used?
- ✓ Is the research product or service-driven?
- ✓ Is the research design based on causal, descriptive, or exploratory factors?
- ✓ What analytical methods will be employed?
- ✓ How reliable will the findings be?
- ✓ How practical will the information be?
- ✓ Is assistance available in understanding and implementing the findings?
- ✓ What information will be provided – analysis only or analysis plus recommendations?
- ✓ Will there be an oral and written report of the findings?
- ✓ How much will it cost?
- ✓ If this is a baseline study, how will I be able to apply the segmentation results to future research?

Plan, Plan, Plan

Planning is the essential ingredient of any successful research program. It is particularly important and often involves a different approach than what you may have used in your past research efforts. Planning involves the following five steps:

- Establish research objectives.
- Specify target population measurement units.
- State relevant definitions.
- Recognize segmentation viability / segment formation criteria.
- Select segmentation bases.

Establish Research Objectives

As with any research project, the first step in conducting a segmentation analysis is to establish appropriate objectives for the research. The goal of this effort is to be able to answer the question, "What are we trying to accomplish in this research project?" There are three basic steps when establishing research objectives: (1) understanding the background of the project, (2) establishing the research purpose, and (3) setting research objectives.

The following checklist provides a framework for establishing the research objectives.

ESTABLISHING RESEARCH OBJECTIVES

Project Background

1) What is the agency's history? What is the agency's "personality" – innovative, conservative, risk-taking?
2) What are its major service offerings? What is the relative importance of each service?
3) What is the agency's ridership? Is it growing, stable, or declining?
4) In one sentence: What is the major challenge or opportunity facing the agency? Then expand on that one sentence: Who? What? When? Where? Why? How?
5) What research has been conducted to address this major challenge or opportunity? What did it show?

Project Purpose

1) What decision(s) will be made or what action(s) will be taken as a result of this research?
2) What are the implications of this decision or action?
3) What are the alternatives available?
4) What are the risks in the decision or action?
5) What are the potential payoffs of the decision?
6) When will the decision be made?

Project Objectives

1) What *specific* information should this research provide?
2) If more than one type of information will be developed from the research, what is most important? What are the priorities for the information?
3) What results are expected? Is there agreement among those involved in the project? If not, why not?
4) Have decision rules been established for evaluating the results? If so, what are they?

Source: Adapted from checklist presented in Practical Marketing Research by Jeffrey L. Pope, p. 48. ©1981 Jeffrey L. Pope. Published by AMACOM, a division of American Management Association, New York.

Unlike other research projects, segmentation analysis offers the agency an opportunity to take a step back and to take a careful look at the background of the agency and its situation. This process of "setting the scene" allows the agency to better understand the environment in which the segmentation analysis will be used and provides a backdrop against which many subsequent decisions will be made. Also, critical to the ultimate success of a segmentation analysis is an understanding of the purpose of the research from the perspective of the management – that is the "management's desires."

Once the background of the study is understood, the overall purpose of the research should be agreed to. The focus here is on understanding how the research will be used rather than the specific type of information that will be sought or the specific methodologies that will be used.

The third step involves setting the specific research objectives. Research objectives may focus on market segmentation identification (for example, identify market segments based on the benefits they seek), description of segments (for example, establish demographic and psychographic profiles of the market), understanding levels of product usage (for example, profile frequent versus infrequent transit riders), segment validation, target market strategy formulation, and so on. Once the overall objective is set, a series of research questions that relate to the focal problem statement can then be developed. The following list illustrates some of the questions a market segmentation study might answer.

RESEARCH OBJECTIVE QUESTIONS

- ✓ What market segments exist for your product or service?
- ✓ Who are the heavy users for your products or services?
- ✓ How are these segments defined (names, sizes, key variables)?
- ✓ What are their characteristics (demographics, media usage, etc.)?
- ✓ Where are the potential customers located?
- ✓ How do these market segments compare with your current customer profiles?
- ✓ How large are these potential market segments?
- ✓ What features or benefits are sought by members of these market segments?
- ✓ What is the expected change / impact of serving these market segments?
- ✓ How much effort and resources should be allocated to the various market segments now? In the future?
- ✓ What unique niche (competitive advantages) does your organization have in serving this market segment?
- ✓ What alternative marketing strategies and tactics appeal to these marketing segments.
- ✓ How well does your product or service meet segment needs? What changes are required?

Following is a description of the research objectives established for the market segmentation study conducted for this handbook.

Project Background:

Public transportation agencies today exist in an increasingly competitive environment where many potential customers have choices ranging from driving alone to telecommuting. Despite the many opportunities, transit ridership is generally declining. In the face of this declining ridership, transit managers are challenging their organizations to find the most effective means of maintaining and increasing ridership. Many are turning to strategies long employed in the private sector to establish a competitive advantage. Market segmentation is one such strategy.

At its most basic level, using a market segmentation strategy can improve an agency's competitive position and enable them to better serve the needs of their existing and potential riders. Segmentation analysis provides the necessary research base on which strategies can be successfully formulated and implemented.

Despite the increasingly widespread awareness of the value of market segmentation in marketing planning and operations, few transit organizations are taking full advantage of the opportunities that market segmentation offers. Research conducted as part of TCRP Project B2 – *Integrating Market Research Into Transit Decision-Making* – showed that there are many reasons why transit agencies fail to use market segmentation research to its full potential. Among the possible reasons for this failure are that, for the most part, users and potential users of market segmentation research and techniques:

- Do not understand what the essential purpose of market segmentation is,
- Do not understand how it relates to their needs, and
- Do not have the knowledge to undertake a market segmentation research effort.

Project Purpose:

The overall purpose of this research was to develop a comprehensive and actionable market segmentation model that can be used effectively to develop marketing and service planning strategies to increase transit ridership.

Research Objectives:

The specific objective of this research was to identify market segments that represent the greatest opportunity for transit ridership using two different approaches: (1) psychographic market segmentation and (2) benefit or needs-based segmentation. The research questions to be answered include:

- What are the market segments for transit services that represent the greatest potential for transit ridership?
- How large are these potential market segments?
- How are these segments defined?
- What are the demographic characteristics of the segments?
- Can the segments be targeted geographically?
- Does transit currently meet segment needs?

Identify the Target Population

The next step in planning is to operationalize the target population of interest. The choice of the target population should be linked back to the project purpose and objectives.

Here the purpose was clearly stated as . . .

Identify market segments that represent the greatest opportunity for increasing transit ridership.

Market segments are groups of individuals or organizations with similar characteristics. To segment the market, the researcher must first specify a unit of measurement that clearly identifies the size and scope of the target consumers.

Ridership growth comes from one of four primary strategies:

1) Retaining existing transit-dependent riders as they move into a different life cycle or lifestyle stage in which they no longer need to rely on public transportation. For example, when teenagers obtain a driver's license or when individuals in entry level positions increase earning power to the point where they can purchase an automobile, they frequently stop riding. Retaining these riders as occasional "choice" riders should be an important objective of all transit agencies.

2) Retaining individuals who have chosen to use public transportation for some purposes – at this time primarily work-related travel. However, the use of public transportation for travel to and from special events and/or other purposes should not be underestimated.

3) Increasing frequency of riding among existing riders. Depending on the definition of a rider, this can take many forms. However, some examples include encouraging those who use public transportation for travel to and from special events to use public transportation for other purposes such as an occasional work commute.

4) Encouraging nonriders to use public transportation, at least occasionally. These gains would represent incremental increases in ridership and can be obtained among peak riders (e.g., commuters using public transportation when they don't need a car at work) or among off-peak ridership (e.g., to / from special events and/or for some types of shopping).

To achieve the overall objective, therefore, the target population was defined to encompass both riders and nonriders.

Once the basic descriptor has been identified, additional modifiers can be used to better understand and explain the target population.

Among riders, two known segments exist – (1) those riders who are dependent upon public transportation because they do not drive and/or do not have access to an automobile and (2) those riders who have chosen to ride public transportation. In most cases, this latter segment does drive and/or does have access to an automobile. However, some members of this segment have "voluntarily" become dependent upon public transportation, choosing to give up ownership of an automobile or ownership of a second car and use transit instead. These people still must be considered choice riders as they typically have the ability to purchase a car at any time.

In further defining the target population for this research, the decision was made to focus on choice riders and nonriders. First, and foremost, ridership retention efforts must be directed at choice riders and newly choice riders. This latter group represents transit dependent riders who acquire a driver's license and/or car and thus become choice riders. Much of the decline in ridership can be attributed to loss of this group of existing riders. Second, choice riders represent a greater opportunity than transit dependent riders for increased frequency of ridership. Transit dependent riders typically ride as often as they need too, representing little opportunity for ridership growth. On the other hand, choice riders often ride for one purpose only – e.g., to commute to work or to travel to special events. There are opportunities for increased frequency of riding by encouraging choice riders to ride for other types of trips. Finally, nonriders represent the other side of the equation. They represent the largest proportion of the population in nearly all markets. In smaller markets, such as Boise, nonriders represent as much as 98 percent of the population. Attracting even a small percentage of this market can represent significant ridership gains.

State Relevant Definitions

In addition to defining the target population, other definitions are important in planning the segmentation analysis. The market or service area is frequently the most critical definition. Geographical limitations or boundary areas must be set.

WMATA provides service to the District of Columbia and neighboring Northern Virginia and Maryland (in Virginia: Arlington and Fairfax Counties, and the Cities of Alexandria, Falls Church and Fairfax City; in Maryland: parts of Montgomery and Prince George's Counties). Because WMATA does not provide service to all areas of these counties, the service area was further defined by zip code. Respondents were carefully screened to determine first which county, district, or city they lived in and then whether they lived in one of the over 150 zip codes used by WMATA to define its service area.

Milwaukee County Transit System serves nearly all of Milwaukee County. Respondents were screened to determine first if they were a resident of Milwaukee County and then if they lived in one of the zip codes that defined MCTS's service territory.

Boise Urban Stages provides service within the City of Boise. Potential respondents were initially screened to determine whether they lived in one of the zip codes that broadly define Boise's service area. Two zip codes were only partially within The BUS' service territory. Potential respondents living in those zip codes were further screened to determine whether they lived within the service territory as delineated by major geographic boundaries – in this case, major arterials known to nearly everyone in Boise were used.

Other definitions that may need to be specified in a segmentation study might include, but are not limited to, the demographic and socioeconomic classifications to evaluate, criteria for determining benefits or lifestyles, and consumption measures. In this instance, the definitions of a nonrider and a choice rider were critical. These definitions follow.

Nonriders are defined as individuals aged eighteen and older who have not ridden in the past year, or if they have ridden in the past year, they have done so only infrequently (less than once a month) or only because their car was not available, in cases of bad weather, or for a special event or occasion.

Choice riders are defined as individuals aged eighteen and older who have ridden once a month or more often in the past year, have a valid driver's license, have a car available for their personal use, or if they do not have a car available use public transportation because they have **chosen** not to buy a car or to buy an additional car for the household.

Recognize Segmentation Viability / Segment Formation Criteria

Not every market can be segmented. Other markets that can be segmented may not be feasible to pursue from a marketing or planning perspective. Therefore, before undertaking a segmentation analysis, the markets should be assessed as to segmentation viability. Art Weinstein identified four questions, called the "4 R's", to indicate whether market segmentation is worth pursuing[17].

- Can you objectively and subjectively rate your target markets by their importance to your overall marketing program?

  By rating a market or target population, the marketer or planner evaluates both objectively and subjectively its potential relative to other market opportunities. The goal should be to quantify the size of the target population and possible segments before segmentation. Past research conducted by your agency or industry research can be used to rate your target market. For segmentation to be viable, the market must be identifiable and measurable.

- Are your target markets of realistic size, large enough to profitably pursue?

  The market or target population must be large enough to support more than one type of marketing approach. Moreover, the segments that are ultimately identified must be of sufficient magnitude so that distinct marketing programs can be developed for the target markets.

The target population of nonriders is typically very large. Previous research at each system indicated that the population of nonriders for WMATA is at least 70 percent of the population, for MCTS the population of nonriders is approximately 85 percent of the population, and for The BUS as much as 98 percent of the population. While potentially a difficult market to win, attracting even a small proportion of nonriders can represent significant ridership gains.

Conversely, the target population of choice riders as a percent of the total population is quite small. However, as a proportion of riders it can be significant. For agencies such as WMATA, research suggests that choice riders may represent as much as 40 to 60 percent of the rider base. On the other hand, for agencies such as MCTS and The BUS, the proportion of choice riders relative to transit dependent riders is much smaller – from as little as 10 percent to as much as 30 percent. However, research also suggests that agencies lose a significant proportion of transit dependent riders when they get a driver's license and/or car and could potentially become choice riders. Therefore, while a smaller target, understanding and targeting choice and newly choice riders in a rider retention effort is extremely important for maintaining and increasing ridership.

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[17] Weinstein, Arthur, "Strategic Segmentation: A Planning Approach for Marketers." Journal of Segmentation in Marketing, (Volume 1, Number 2 1997), pp. 7 – 16.

- Can you reach your customers easily through the mass media, mailing lists, or other means?

  For segmentation to work effectively, the resulting target markets must be easily reached to minimize marketing investment and maximize performance. It is clear from past marketing efforts on the part of transit agencies nationwide that, in most cases, riders and nonriders can be effectively reached through traditional mass media. Moreover, some transit agencies (e.g., MCTO in Minneapolis) have experimented with nontraditional methods, using a more direct one-to-one marketing approach.

- Will targeted customers respond to marketing initiatives?

  Identifying a large enough segment of customers that can be reached by a reasonable means is of little value if they are nonresponsive to marketing efforts. Again, it is clear from past marketing efforts by transit agencies that while a large number of nonriders will, under no circumstances, ride public transportation, nonriders can be successfully attracted with the introduction of innovative products and services, and through effective marketing programs informing them of existing services. Moreover, there is evidence to support the importance of marketing to existing riders as their life styles change.

Assuming positive responses to the above questions, the next step should be to identify criteria for what constitutes "good" market segments. The following criteria are widely used as the standards for market segmentation. However, your agency may also choose to identify specific segment formation standards based on the specific decisions you are making and the alternatives you are considering.

- **Homogeneity within the segment** – This is the test for similarities among group members. Individuals within the segment should fit some sort of "typical profile." Because of their similar characteristics, it is to be expected that members should exhibit similar patterns of behavior or potential for behavior.

- **Heterogeneity between segments** – This is the test for differences between the identified segments. Segments should be clearly distinct from one another and have their own "personality." It should be clear which group an individual belongs to based on key attributes. Different segments generally exhibit different behaviors, have different needs or motives which then can be targeted by the marketer or planner.

- **Sizable population** – Most segmentation studies identify two or more segments to possibly pursue. Over-segmenting a market – that is dividing the market into a multitude of mini-markets – is costly and is generally of little value for developing strategies – either service planning or marketing. While the purpose of segmentation is to create targeted marketing programs, it is not meant to be as extreme as a one-to-one marketing effort. Therefore, one of the criteria for segmentation should be the ability to create market segments that represent a sizable proportion of the population.

- **Meaningful segment data** – Finally, for segmentation to be effective, there must be value to the marketing information that is provided. Good market segmentation research must provide the marketer and planner with operational data that is practical, usable, and can be readily translated into strategies.

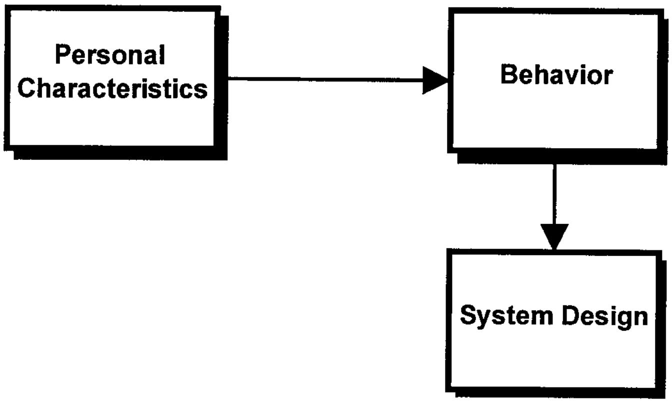
Select Bases for Segmentation

As Chapter 2 pointed out, markets can be segmented in a variety of ways. The selection of the basis variables is a critical decision in any segmentation study. There is no one clear, best method. The basis or bases to use depend on a company's marketing situation and the information needed by management. It is often useful, therefore, in a segmentation study to develop a model that identifies the nature of the consumer decision process and the variables that affect that process. The development of a model is unique to market segmentation research and may be one area for which outside assistance may be needed.

A model was developed for the project that explores the links between the independent variables – demographic characteristics, values, lifestyle, attitudes toward transit, etc. – and the dependent variable – transit ridership. Developing a sound conceptual model was essential to the research design process as it formed the basis for decisions about sample design, questionnaire design, and the development of an analysis plan. The process by which the model was developed and the resulting model are described in detail below.

The Basic or Traditional Model. Traditionally, "segmentation research" in transit agencies, as well as in many industries and companies, starts with actual behavior – for example, frequent versus infrequent ridership or nonridership – and then searches for variables correlated with that behavior. A theoretical model or integrative treatment of the causes of that behavior does not govern this search. Rather, it is aimed at describing potential market segments in terms of highly correlated attributes.

For example, transit agencies have observed a direct correlation between the personal characteristics of an individual and ridership. This approach stresses relatively enduring personal characteristics – for example, socioeconomic status. Based on the relationship between these characteristics and resulting behavior, services are designed. The figure below illustrates this link.



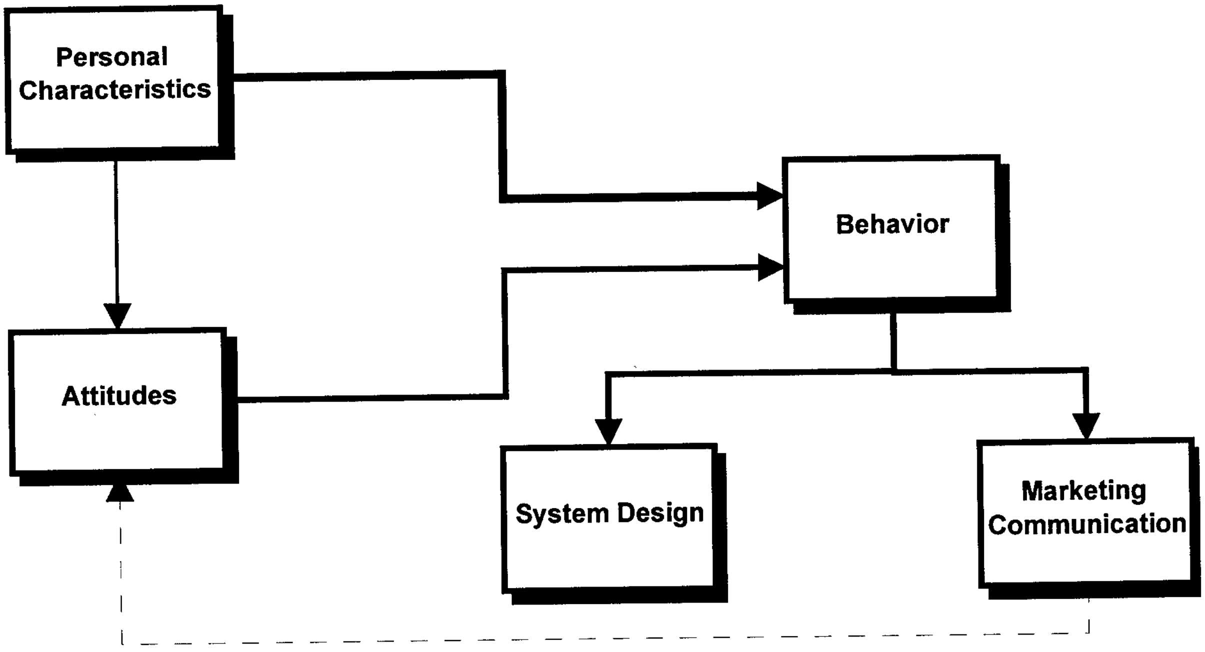
For example, less affluent individuals who do not have or have limited access to a car (e.g., a household shares a single automobile) are more likely to use public transportation. More affluent individuals who have multiple cars per household are more likely to drive. A market segment – the transit dependent rider – emerges from this assumption and the fixed route system serving a widespread area was developed to "meet" the needs of this market.

Frequently, higher levels of service are targeted in lower income neighborhoods. This system often requires multiple transfers to get from an individual's origin to their destination, travel time is not competitive, and service hours and frequency may vary throughout the day. However, the service "meets" the needs of the market, as they have no other option.

In more recent years, transit agencies have identified a second target market – commuters. Again, this market is distinguished by their personal characteristics – that is, they typically commute from a suburban area to a high-density urban area, usually the downtown CBD. Agencies believe that a large segment of this market represents "choice" riders. That is, they have a car available but have chosen to use public transportation. Efforts have been made to develop services that better "meet" the needs of this market. Park-and-ride lots providing direct service to the downtown CBD, frequent peak-hour service, and express "flyers" are all examples of service strategies designed to meet the demands of this market. While this market appears to have a choice, a closer examination of their characteristics indicates that in many cases it is the absence of parking and/or the cost of parking where they work that influences ridership. In many ways, this market is as "captive" as the transit-dependent riders described above. Moreover, as densities and work patterns in cities and suburbs have changed, many systems have seen dramatic erosion in market share from within this market.

An Expanded View

Some agencies have extended these correlations by suggesting that attitudes toward public transportation influence behavior. Whereas the previous model is atheoretical, this approach reflects various theories from the behavioral sciences. Moreover, while the previous model stresses relatively enduring personal characteristics that vary little across products or situations, this model focuses on variables that are product or situation specific. This more elaborate model is illustrated in the figure below.



Guided by this model, agencies have undertaken segmentation studies that examine respondents' attitudes toward public transportation. For example, King County Metro (Seattle) and Tri-Met (Portland) both conducted market segmentation research that included a series of questions focusing on attitudes toward public transportation and/or about transportation in general. A sample of these questions follows:

If offered a choice between convenient public transportation and taking a car, I would always drive a car even in rush hour traffic.

As long as gas prices stay low, I'll drive my car rather than use public transportation.

I often worry about others on the bus who may create disturbances.

We are going to have to change our attitudes about how we use our cars.

People who ride the bus are not usually like me.

If I have to start my car anyway, I might as well drive all the way rather than park and catch a bus or train.

Other agencies, such as Caltrans, have focused more on a benefit segmentation approach, exploring which attributes are important in service design. The assumption is that the presence and/or absence of these attributes influence behavior. Questions used in this approach include:

As you know, different people consider different things important when they are deciding how they will travel to and from work or school I'd like to know what you personally find desirable in a method for getting to and from work or school.

I can count on it to get me to where I am going on time.

Offers me the flexibility I need for my schedule.

Gets me to and from work / school without feeling stressed.

I can get other things done while commuting, it's not just dead time.

Gives me an opportunity to be alone to think.

Gets me there and home the quickest way possible.

Is good for the environment.

Minimizes my risk of getting in a traffic accident.

It's someone else's responsibility to get me there on time.

In the attitudinal studies, the attitude statements are analyzed using some form of multivariate analysis – for example, cluster analysis – to identify groups of respondents having similar attitudes. Additional analyses typically examine the personal characteristics of the customers in the resulting groups, providing a more detailed profile of these market segments. This approach assumes that both personal characteristics and attitudes influence behavior. Moreover, it recognizes the link between personal characteristics and attitudes. With this deeper understanding of the marketplace, agencies have designed products and services to meet the needs of these markets. Agencies also have used this richer picture of their target audiences to develop marketing communications programs containing messages designed to specifically overcome negative attitudes. For example, advertising campaigns portray transit users as demographically similar to a target population to dispel stereotypes about undesirable persons using public transit.

A New Perspective

While to some extent these models reflect an accurate portrayal of the marketplace for public transportation services, they are limited in scope and fail to recognize the complexity of the actual decision process. For example, these models do not provide for the influence of personal values on transit usage. A transit values and lifestyle model is suggested and forms the basis for the design of the research used in the test markets. It contains the following components.

This model begins with an individual's personal characteristics. Here, however, personal characteristics are differentiated between enduring characteristics (an individual's demographic and socioeconomic characteristics) and their "psychographics." Psychographics include what an individual does (i.e., their activities, interests, habits, media exposure, travel characteristics, etc.) and how they feel about life (i.e., their attitudes, beliefs, opinions, emotions, needs, wants, and values).

While the previous components of the model view an individual as a consumer in general, this component looks at the person as a potential consumer of a particular product class – in this case, local transportation. This component measures an individual's perceived profile of wants or needs relevant to the mode choice decision. The model recognizes that an individual's demographic / socioeconomic and psychographic profile influences these attitudes. Moreover, the model recognizes that this is simply one component of overall attitudes.

The model begins to look considerably different at this point. We are suggesting that system design has considerable influence on overall attitudes. That is, an individual's perceptions of the extent to which the current system delivers the desired benefits will influence overall attitudes. In the case of existing riders, an individual's perceptions of the extent to which the system delivers the desired benefits may be based on personal experience. For nonriders or infrequent riders, these perceptions also may be based on past experience with the system or experience with other systems. For nonriders, this experience may be recent – for example within the last one to three years – but often is far back in time and may not be truly reflective of the current types and levels of service. Moreover, this experience may not truly reflect the "real system" as many infrequent riders or nonriders use transit during off-peak hours or in special circumstances – for example, when the weather is bad or for travel to special events. For both riders and nonriders, an individual's perceptions of a system also are influenced by word-of-mouth. This word-of-mouth can be listening to friends and/or coworkers discussing local transit services. Articles in the press may also be considered a form of word-of-mouth.

Moreover, marketing communications influences an individual's perceptions of the benefits desired. Many agencies run advertising and other communications programs to communicate the strengths of a system and/or changes in service. These marketing communications reach both riders and nonriders. In contrast to word-of-mouth, marketing communications are controlled communications and typically present a positive view of the system.

We then suggest that an individual's profile of wants or needs for transportation and their perceptions of the extent to which an existing public transportation system delivers these desired benefits combine to create an overall attitude toward, preference for, and intention to use or not use a particular travel mode. This approach is based heavily in the basic expectancy - value (E-V) approach to motivated behavior and human decision-making explored by Peak[18] and Fishbein's concepts of association learning and mediation[19].

At this point, if earlier models were used, our implicit assumption would be that these overall attitudes toward, preferences for, and intentions to use or not use a particular travel mode would provide a good prediction of behavior. In this model, we are positing that the scrambling effects of the environment and the presence or absence of facilitating factors moderate behavior. For example, a person with negative attitudes toward using public transportation and a preference for driving alone may indeed use public transportation if their employer does not provide subsidized parking at their place of work. Conversely, a person with positive attitudes toward service, a preference for using public transportation, and who fully intends to ride the bus may be unable to do so if they do not have access to service, do not have service available when needed, or simply are unaware that service is available.

The final component of the model consists of measures of behavior. A range of measure can be employed to measure the "nature of behavior" – for example, mode choice – and the "magnitude of behavior" – for example frequency of riding.

The model is illustrated on the following page.

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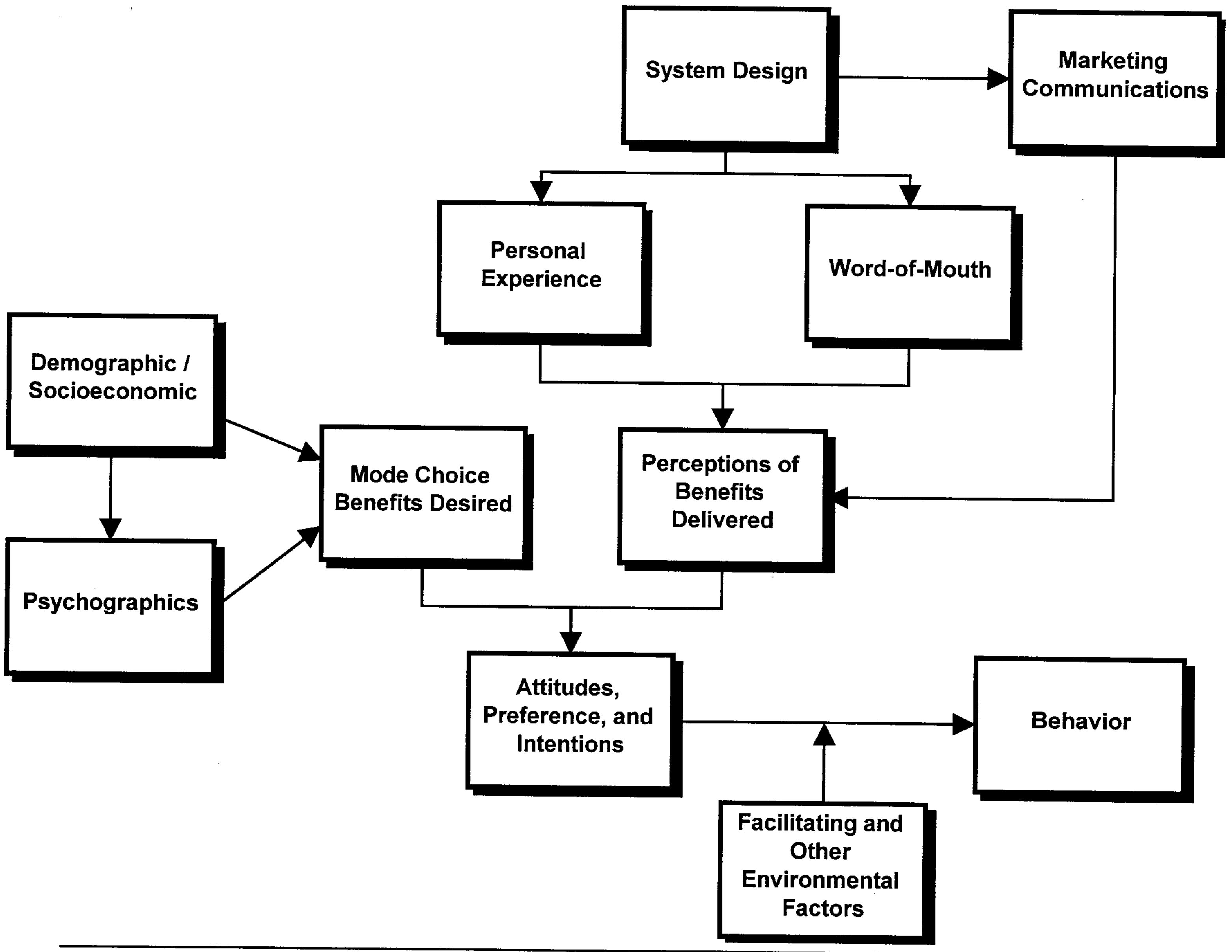
[18] Helen Peak, "Attitude and Motivation," in M.R. Jones (ed.), *Nebraska Symposium on Motivation* (Lincoln: University of Nebraska Press, 1954), pp. 149-189.

[19] Martin Fishbein, "Attitude and the Prediction of Behavior: A Behavior Theory Approach to the Relations Between Beliefs About an Object and the Attitude Toward an Object," in Martin Fishbein (ed.), *Readings in Attitude Theory and Measurement* (New York: Wiley, 1967).


System Design
Marketing Communications
Personal Experience
Word-of-Mouth
Demographic / Socioeconomic
Mode Choice Benefits Desired
Perceptions of Benefits Delivered
Psychographics
Attitudes, Preference, and Intentions
Behavior
Facilitating and Other Environmental Factors

Implementation

Once this basic planning process has been completed, the next phase in the process is implementation. There are five major components to implementation:

- Determining the sample design.
- Designing the survey instrument.
- Collecting the data.
- Analyzing and interpreting the data.
- Presenting the results.

Each step will be discussed below.

Determining the Sample Design

All true segmentation studies have one goal in common – projecting the segmentation schema obtained to the entire pertinent market. Therefore, these studies generally require probability samples from that market. The use of convenience or judgement samples will lead to unreliable results and potentially misleading results and are not projectable to the population.

Quota samples seldom work correctly in segmentation studies. Post-data collection sample balancing procedures, or weighting, can severely affect the results you get, if done before using clustering procedures. These procedures also make it difficult to estimate errors, and they complicate modeling of the segments.

Sampling entails many steps. It is easy to underestimate the complexity of this process. The exhibit below illustrates the seven basic steps for sampling.

Step	Description
1) Define the population	Could be defined by (a) "elements," or kinds of people, (b) where (place), or (c) when (time).
2) Specify sampling frame	Determine lists or sources for locating the sample – for example, using the telephone book, a city directory, random digit dialing (RDD) in a specified area, recruiting at a central location, etc.
3) Specify sampling unit	Specify the "unit" for sampling. The unit might be one person, a household, or an entire city block. The sampling unit may contain one or more elements in the population.
4) Specify the sampling method	Determine the method by which the sampling units are to be selected (e.g., RDD, every N adults boarding a bus, etc.)
5) Determine the sample size	Choose the number within the population to be sampled.
6) Specify the sampling plan	Choose the actual procedures for selecting the sampling units.
7) Select the sample	Carry out the office and fieldwork necessary for the selection of the sample.

These seven basic steps were applied in each test market.

Step	Applied
1) Define the population	Population was defined in terms of ridership. The population was defined as choice riders – individuals who had ridden transit in the past year but had an option to use some other form of transportation or had made a conscious choice to use public transportation – and nonriders – individuals who had not ridden transit in the past year.
2) Specify sampling frame	The sampling frame for nonriders and for choice riders in those markets where the incidence of riders in the population was reasonably high (greater than 15 percent), was random digit dialing within the area served by the transit agency. The sample frame was purchased from a national sampling company – Scientific Telephone Samples. Other companies (e.g., Survey Sampling) also sell RDD sampling frames. Purchased RDD sample is often more efficient than creating your own RDD sample as business and nonworking numbers are culled. In markets where the incidence of choice riders in the population is very low, RDD is cost-prohibitive. In Boise, an alternative approach to developing the sampling frame was to distribute a brief postcard survey on-board buses. The postcard survey asked several questions to determine dependence on transit as well as a request to participate in additional research. A random sample of "choice" riders was then drawn from this database of riders. Approximately half of the choice riders were identified through RDD sampling; the remainder was drawn from this database. The nonrider frame was RDD within the area served by the Boise Urban Stages.
3) Specify sampling unit	As the purpose of this study was to segment individuals, the sampling unit was one person in the household.
4) Specify the method	Random digit dialing (RDD) was employed.
5) Determine the sample size	A total of 3,000 interviews – 1,000 in each test market – was completed. One criterion for segment formation was set that no segment should be smaller than 10 percent of the population. This sample size provided for a large enough sample to provide for reliable analysis of the resulting market segments. For example, under this criterion, the smallest segment sample size would be 300 – or 100 in one test market. The level of error for this segment was plus or minus 5.6 percent – or 9.8 percent in one test market.
6) Specify the sampling plan	Computer-assisted telephone interviewing was used. Each sample element was attempted up to five times. Other procedures were instituted to minimize nonresponse bias resulting from not-at-homes or busy numbers. For example, "soft refusals" were recontacted at another time to determine willingness to participate. Callbacks were scheduled to insure that the interview could be completed when the respondent had sufficient time.
7) Select the sample	The sample was managed via a computer-assisted sample management program – Ci3 CATI.

Designing the Survey Instrument

As with any research project, questionnaire design is a critical element. It is not the purpose of this handbook to provide general guidelines for questionnaire development. This information is available from many other sources, including the handbook that was developed for TCRP Project B-2 – *Integrating Market Research Into Transit Decision-Making*. Instead, this section focuses on the unique aspects of questionnaire development as applied in segmentation studies.

The design of a questionnaire for a segmentation study is both an "art" and a "science." It also an unusually complex process. The design of the questionnaire is based on the model. It provides a general indication of basic descriptor variables that will be required. Scale development may be an area where you seek outside assistance. The complexity of questionnaire design in segmentation analysis stems from a number of factors:

- **The number of descriptor variables is enormous**. Most of the variables covered in consumer behavior literature can be considered as segment descriptors. These include demographic and socioeconomic characteristics, media usage, behavioral characteristics, attitudes unrelated to the basis variables, and so on. It is possible for both those who design the study and the respondents who answer the questions to become lost in all these possible descriptors.

- **"Actionability" or being able to do something with the findings, remains a difficult question.** Inadequate descriptor variables can lead to a study in which you develop some strong-looking insights from the basic variables, but not enough action-oriented information to move forward with any real confidence. During study design, consider management's ability to use the findings, in particular information from the descriptors. Will these help form the agency's marketing strategy and tactics – for instance, can they influence service design, pricing, media scheduling, promotional messages, and so on? Expanding the list of descriptor variables can often make the study more usable. Alternatively, using one basis variable that is generally familiar to research users – for example, geodemographics or product usage – and adding a new approach – for example, benefit segmentation or psychographics – may help make the findings more actionable.

- **You may only find weak links between basis and descriptor variables.** You many not be able to identify segments with varying responses to marketing actions, based on demographic and other segment descriptors. Conversely, although segments defined by demographic and other general customer characteristics tend to be easily described, they may not have varying responses to marketing variables. This lack of strong connections can emerge even in well-designed studies. Sometimes, attitudes and opinions will truly cut uniformly across demographic characteristics. Then, positive responses will not be associated with any group that you can reach selectively. Finally, you may have trouble finding "lifestyle" differences between segments, just as with demographic differences. Lifestyles can have some relation to both product use and to demographic characteristics. Nevertheless, unless responses to your marketing efforts can vary in these groups, you cannot call them true segments.

Keeping in mind these issues, other segmentation research suggests several guidelines for constructing a more "disaster-proof" study:

- **Include at least one battery of questions that address the concerns that you believe will form the basis for grouping respondents**. This battery of questions should be developed based on the model you have developed or your research objectives. Then consider including one or two alternative batteries, each taking a different approach. For example, you might include (1) a battery of questions dealing with the ways respondents view transit and occasions or reasons for its use, (2) a second battery about user and self-perceptions related to transit ridership, and (3) another battery addressing broader "life style" and interest-related concerns. While this can add to the length of the questionnaire and the cost of the research, it can provide some insurance. Given the fixed cost of many segmentation studies, the incremental costs of adding a second battery of questions may not be significant.

- **Try not to include too many questions of different types in the basis variables.** Careful pretesting, to be discussed later, is important in keeping the number of questions required to develop the basis variables at a minimum while at the same time insuring reliable measures.

As can be seen in the following example, the design of the questionnaire for the test study closely followed the final model. A copy of the Final Questionnaire used for this research is included in the Appendix. Moreover, a detailed description of the analysis that was conducted to determine what scale items to include and the components of each scale are contained in the Final Report for this project, which is available upon request from the Transportation Research Board, Transit Cooperative Research Program.

Screening Questions.

A series of screening questions were developed to identify qualified respondents as defined under the sampling plan. These included questions on area of residence as well as ridership.

Demographic / Socioeconomic Characteristics

A set of standard demographic questions was included to obtain measures of an individual's demographic and socioeconomic characteristics. These measures included:

Age,
Education,
Marital status,
Employment status (of individual and spouse),
Occupation,
Household size and composition (i.e., number and age of children),
Ethnicity,
Household income, and
Perceived social class.

Moreover, respondents were asked to provide the names of cross streets or intersections nearest their home. These responses were geocoded and the census tract in which the respondent lives identified. This data could be used in conjunction with census data and standardized geodemographic data to examine what geodemographic segments emerge from the data as well as to determine the size of the residence area in which the individual lives (another important demographic / socioeconomic variable).

Values

The term "value" has been defined as "an enduring belief that a particular mode of conduct or that a particular end state of existence is personally and socially preferable to alternative modes of conduct or end states of existence." So defined, a value is "a standard or criterion that tells us how to act or what to want and what attitudes we should hold," "a standard we employe to justify behavior, to morally judge and to compare ourselves with others," and "a standard we employ to tell us which values, attitudes, and actions of others are worth or not worth trying to influence."[20, 21, 22]

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[20] Rokeach, Milton J., "The Role of Values in Public Opinion Research," *Public Opinion Quarterly*, XXXII (Winter, 1968-1969), pp. 547 – 559.

[21] Rokeach, Milton J., The Nature of Human Values, (New York: Free Press) 1973.

Following this concept of value, the List of Values (LOV) typology was developed. The LOV is composed of nine values that can be scored in a number of ways. Each value can be scored on a nine or ten point scale (very unimportant to very important), or the values can be rank orders from most to least important. The LOV measures those values that are central to people in living their lives, particularly the values of life's major roles (e.g., work, leisure, and daily consumptions).

The LOV was originally developed by Rokeach and contained eighteen terminal values. The LOV used in this research is a shorter version of the scale as developed by Kahle.[23] This shorter version has been widely tested. The measures are significantly correlated with various measures of mental health, well being, adaptation to society, and self[24] and are predictive of a number of consumer behaviors.[25]

Psychographics

While it would have been possible to create an extensive series of questions designed to assess psychographics in a product-specific context, it was decided that the use of standardized scales offered some significant advantages over an ad hoc questionnaire. First, because standardized scales are used repeatedly, norms can be developed. Without norms, it is often difficult to tell whether a particular score on a particular scale is high, medium, or low. Second, when standardized scales are made publicly available, they can be subjected to tests of convergent and discriminant validity by independent analysts in a variety of research settings. Scales that survive such trials are substantially more trustworthy than untested ad hoc question sets. Finally, when a scale is used repeatedly in a variety of settings, it begins to accumulate "surplus meaning." That is, when its users begin to understand the network of other variables to which it relates, they can say much more about it than they could before.

The first draft of the questionnaire was developed using the scales as presented in the literature. Where possible, the entire scale was used. If the scale was very large, the existing literature was used to identify strategies to shorten the scale. This version of the questionnaire was pretested with over 300 respondents, both nonriders and choice riders. This first interviews averaged over 50 minutes in length.

Extensive psychometric testing was completed to reduce and refine these scales. A second version of the questionnaire was pretested with over 100 respondents. Again both nonriders and choice riders were interviewed. This version of the questionnaire was significantly shorter – approximately 40 minutes in length. Again, analysis was conducted to determine whether the scales continued to be reliable measures of the broader dimensions and to determine whether further reduction and/or refinement was possible.

The final questionnaire reflects the results of both these pretests. It was again tested with over 100 respondents. The focus of this pretest was largely on providing a final estimate of the survey length. Moreover, results were analyzed to verify the accuracy of the programming for the questionnaire logic (e.g., skip and branching patterns).

Following are descriptions of the psychographic dimensions included in the design.

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[22] Kahle, Lynn R, Social Values and Social Change: Adaptation to Life in America, (New York: Praeger Publishers), 1983.

[23] Beatty, Sharon E., Lynn R. Kahle, Pamela Homer, and Shekhar Misra, "Alternative Measurement Approaches to Consumer Values: The List of Values and the Rokeach Value Survey," *Psychology & Marketing*, 2 (Fall 1985), pp. 181 – 200.

[24] Kahle (1983).

[25] Homer, Pamela and Lynn R. Kahle, "A Structural Equation Analysis of the Value-Attitude-Behavior Hierarchy," *Journal of Personality and Social Psychology*, 54 (April 1988), pp. 638 – 646.

Susceptibility to Interpersonal Influence

Consumer susceptibility to interpersonal influence is assumed to be a general trait that varies across individuals and is related to other individual traits and characteristics. The construct is defined as the need to identify with or enhance one's image in the opinion of significant others through the acquisition and use of products and brands, the willingness to conform to the expectations of others regarding purchase decisions, and/or the tendency to learn about products and services by observing others or seeking information from others.[26] It was hypothesized that the degree to which an individual is influenced by others' perceptions of the types of people who use public transportation and its reflection of one's self-image is associated with transit ridership and/or openness to using public transportation.

The original scale consists of twelve items. Each are operationalized as a bi-polar, seven-place rating scale ranging from "strongly agree" to "strongly disagree." All items are positively worded. The twelve items reflect two correlated dimensions of susceptibility to interpersonal influence: normative and informational influences. The scale used in this questionnaire consisted of five items, such as the one shown below.

I often identify with other people by purchasing the same products and brands they purchase.

Optimum Stimulation Level / Arousal Seeking Tendency

Optimum Stimulation Level (OSL) is a property that characterizes an individual in terms of his / her general response to environmental stimuli. This is based on the assumption that each individual has a uniquely determined, homeostatic degree of stimulation or an "optimum stimulation level" (OSL) with which he / she is comfortable.[27]

Similarly, Arousal Seeking Tendency (AST) is viewed as a characteristic that varies across individuals. An individual's preference for an environment is closely related to his / her preferred arousal. Some people prefer calm settings, whereas others actively seek to increase their arousal by choosing novel, complex, or unpredictable settings.[28]

Research suggests that an individual will adjust their behavior to obtain the optimal level of stimulation or arousal. For example, if an environment provides more stimulation than desired, the individual will engage in behavior to reduce stimulation. In public transportation, therefore, individuals who are uncomfortable with high levels of stimulation may adapt their behavior to reduce this stimulation or may simply avoid any situation that is too stimulating. For example, riders who are uncomfortable with crowded places or around different people may choose to ride only during off-peak hours. Nonriders may choose to not ride at all or may simply not even consider riding.

The AST is a 40-scale item, where each item is evaluated on a nine-point Likert format (i.e., very strong disagreement [-4] to very strong agreement [+4]).[29] The complete AST scale was far too long to be included in the questionnaire. Moreover, the response format was different from other Likert scales used in the questionnaire. Therefore this scale was shortened to five items and the response format was changed to correspond to the other Likert scale questions on the survey.

I like to go somewhere different every day.

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[26] Bearden, William O., Richard G. Netemeyer, and Jesse E. Teel, "Measurement of Consumer Susceptibility to Interpersonal Influence," Journal of Consumer Research, 15 (March 1989), pp. 473 – 481.

[27] Raju, P.S., "Optimum Stimulation Level: Its Relationship to Personality, Demographics, and Exploratory Behavior," *Journal of Consumer Research*, 7 (December, 1980), pp. 272 – 282.

[28] Mehrabian, Albert and James A. Russell, An Approach to Envionmental Psychology. Cambridge: The MIT Press (1974).

[29] Mehrabian and Russell (1974).

Innovativeness

Innovativeness is a personality trait that is assumed to underlie the adoption of new products or services as well as a general openness to information processing. Innovators are described as individuals who are open to new experiences and novel stimuli, who possess the ability to transform information about new concepts, ideas, products, or services for their own use, and who easily recognize the potential application for new ideas.[30, 31] It was hypothesized that an individual's openness to trying new products and services would be related to an individual's willingness to try public transportation, particularly alternative public transportation services that are being considered.

This scale is still under refinement and somewhat limited information was available for evaluation. However, two versions of the scale have been developed – each containing 24 items. Craig and Ginter factor analyzed the original version of the scale and found seven factors. These factors are: new is wasteful, social desirability, novelty seeking, risk aversion, style consciousness, satisfaction with the status quo, and other-directedness.[32] The length of the survey precluded the use of the entire scale developed by Leavitt and Walton. Variables were selected from those factors dealing with desirability, risk aversion, and satisfaction with the status quo. Those variables that were most highly correlated with a factor were selected. An example follows:

When it comes to taking chances, I would rather be safe than sorry.

Socially Responsible Consumption Behavior

Socially responsible consumption behavior (SRCB) is defined as those consumer behaviors and purchase decisions that are related to environmental and resource-related problems. These behaviors and decisions are motivated not only by a desire to satisfy personal needs, but also by a concern for the welfare of society in general.[33, 34] This is thought to be an important component of the mode choice decision as several transit research studies have shown an association between an individual's attitudes toward the environment or "greenness" and transit ridership.

The SRCB is composed of 40 Likert items (agree-disagree) scored on a five-point basis. Scores can be summed to form an overall SRCB Index. The length of this scale precluded inclusion of the entire scale. Instead, seven items were selected for inclusion that had the highest item-to-total correlation. Moreover, some wording was simplified.

I think that a person should urge his or her friends not to use products that pollute or harm the environment.

In addition to this specific measure of socially responsible consumption behavior, a more generalized scale to measure overall attitudes toward the environment was included. General environmental concern (GEC) is a construct frequently used as a measure of the importance of the environment and its protection. It is cited as an indicator of the greening of

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[30] Leavitt, Clark and John Walton, "Development of a Scale for Innovativeness," in *Advances in Consumer Research*, Vol. 2, Mary Jane Schlinger (ed),. Ann Arbor: Association for Consumer Research (1975), pp. 545-554.

[31] Leavit, Clark and John R. Walton, "Openness of Information Processing as a Moderator of Message Effects on Behavior," *Faculty Working Paper*, College of Business Administration, Ohio State University (1988).

[32] Craig, C. Samuel and James L. Ginter, "An Empirical Test of a Scale for Innovativeness," in *Advances in Consumer Research*, Vol. 2, Mary Jane Schlinger (ed),. Ann Arbor: Association for Consumer Research (1975), pp. 555-562.

[33] Antill, John A. and Peter D. Bennett, "Construction and Validation of a Scale to Measure Socially Responsible Consumption Behavior, in The Conserver Society, Karl H. Hennion II and Thomas Kinnear (eds). Chicago: The American Marketing Association (1979), pp. 51 – 68.

[34] Antil, John A., "Socially Responsible Consumers: Profile and Implications for Public Policy," *Journal of Macromarketing* (Fall 1984), pp. 18 - 39.

consumption. GEC is useful as an attitudinal construct because it is clearer than the term "green" which is imprecise and may mix attitudinal and behavioral constructs.[35]

The General Environmental Concern is measured by agreement ratings using three items on a Likert scale. The three items were derived from those used by Maloney and Ward[36] and Maloney, Ward, and Braucht[37]. An example:

We have to do something immediately to reduce the amount of gasoline we use.

Automobile Involvement

Transit research has long suggested that American's "love affair with the automobile" is associated with ridership and the propensity to ride. This involvement is borne out in other research that suggests that product involvement as a long-term interest in a product is based on the centrality of the product to important values, needs, or the self-concept, and is primarily a function of individual differences. Consistent with this conceptualization, Bloch views product involvement as a construct that affects consumer behavior on an ongoing basis and varies across individuals (ranging from minimal levels to extremely high levels). Based on this view, a scale to measure involvement with automobiles was developed.[38]

The original scale developed by Bloch consisted of a 17-item scale that uses a Likert scale (strongly agree – strongly disagree), scored on a six-point format. In another study, Shimp and Sharma factor analyzed the Automobile Involvement Scale with a sample of 696 adult nonstudent respondents. They compared the six-factor solution identified by Bloch with a number of other factor structures. This analysis suggested that Bloch's six-factor structure could be simplified. Based on this analysis an eight-item, two-factor version of the scale was developed as a reasonable alternative to Bloch's 17-item, six-factor scale.[39] The final scale used in the questionnaire retained four of the original scale items, including:

Driving my car is one of the most satisfying and enjoyable things I do.

Overload

It is well recognized that an individual's time has become increasingly burdened. Moreover, it is believed that time and role overload and perceptions of transit may be related. Therefore, a scale to measure the extent to which individual's feel their time is overburdened was identified. One such scale – Role Overload of the Wife – was developed to explore the conflict that occurs when the sheer volume of the behavior of the wife exceeds her available time and energy.[40] This definition is consistent with the organizational behavior literature view of role overload.[41], [42]

This scale is composed of 13 Likert items on a five-point basis from strongly disagree to strongly agree. For the first pretest wave, the complete 13-item scale was used. The scale was changed to be consistent with the other scales in the questionnaire – scored on a seven-point Likert scale – and streamlined to contain only five items, such as:

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[35] Shrum, L.J., J. A. McCarty, and T.M. Lowrey, "Buyer Characteristics of the Green Consumer and Their Implications for Advertising Strategy," Journal of Advertising, 24 (1995), pp. 71 – 82.

[36] Maloney, M.P. and M.P. Ward, "Ecology: Let's Hear From the People," *American Psychologist*, 28 (1973), pp. 583-586.

[37] Maloney, M.P., M.P. Ward, and N.G. Braucht, "Psychology in Action: A Revised Scale for the Measurement of Ecological Attitudes and Knowledge," *American Psychologist*, 30 (1975), pp. 787-790.

[38] Bloch, Peter H., "An Exploration Into the Scaling of Consumers' Involvement With a Product Class," in *Advances in Consumer Research*, Vol. 8, Kent B. Monroe (ed.). Provo: The Association for Consumer Research (1981), pp. 61 – 65.

[39] Shimp, Terence and Subhas Sharma, "The Dimensionality of Involvement: A Test of the Automobile Involvement Scale," in the *American Marketing Association Winter Educator's Conference: Research Methods and Causal Methods in Marketing*, William R. Darden, Kent B. Monrol, and William R. Dillon (eds.). Chicago: The American Marketing Association (1983).

[40] Reilly, Michael D., "Working Wives and Convenience Consumption," *Journal of Consumer Research*, 8 (March 1982), pp. 407-417.

[41] House, Robert L. and John R. Rizzo, "Role Conflict and Ambiguity as Critical Variables in a Model of Organizational Behavior," *Organizational Behavior and Human Performance*, 7 (1972), pp. 467 – 505.

[42] Rizzo, John R., Robert J.House, and Sidney Lirtzman, "Role Conflict and Ambiguity in Complex Organizations," *Administrative Science Quarterly*, 15, (1970), pp. 150 – 163.

I need more hours in the day to do all the things that are expected of me.

Time Management

Related to the concept of role overload is the extent to which an individual employs strategies to manage their time. It was hypothesized that the extent to which an individual organized their time and/or felt the need to be in control of their time would influence their ridership and/or propensity to ride transit.

Several scales have been developed to explore the extent to which people manage time. Several of these scales have been developed to examine the relationship between time management and shopping behavior. Lumpkin and Darden used a multi-item, six-point Likert summated ratings scale ranging from strongly disagree to strongly agree. The scale measures a person's tendency to schedule activities and organize time.[43], [44] The final scale used four items that showed the highest item-to-total internal consistency.

I am always looking for ways to be more efficient so that I can get more things done.

Internal Locus of Control

Locus of control refers to the degree to which a person attributes success to his or her own efforts versus fate or other forces. It was hypothesized that this factor combined with other personality traits related to feelings of personal control would be associated with one's current ridership or propensity to ride.

The items for this scale were taken from Rotter. However, his scales consisted of 23 pairs of opposing statements in a forced-choice format.[45] Therefore, a shortened version of Rotter's scale was used, in part based on research by Lumpkin and Hunt.[46]

When I make plans, I am certain I can make them work.

Self Confidence / Leadership

Some research has shown a link between self-confidence and the extent to which individuals rely on public transportation and/or others to get around. In this study, respondents who were self-reliant in terms of transportation were significantly more self-confident than persons who were dependent on others for transportation.[47] Therefore, a scale to measure the perception of one's self as a leader and having confidence was included. This scale was drawn from several sources. It is believed to have been developed originally by Burnett and Bush (1986)[48].

I think I have more self-confidence than most people.

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[43] Lumpkin, James R., "Shopping Orientation Segmentation of the Elderly Consumer," *Journal of the Academy of Marketing Science*," 13 (Spring, 1985), pp. 271-289.

[44] Lumpkin, James R., and William R. Darden, "Relating Television Preference Viewing to Shopping Orientations, Lifestyles, and Demographics," *Journal of Advertising*, 11 (1982), pp 56-67.

[45] Rotter, J.B., "Generalized Expectancies for Internal and External Locus of Control of Reinforcement," *Psychological Monographs: General and Applied*, 80 (Volume 1, 1966), Whole No. 609.

[46] Lumpkin, James R. and James B. Hunt, "Mobility as an Influence on Retail Patronage Behavior of the Elderly: Testing Conventional Wisdom," Journal *of the Academy of Marketing Science*, *17* (Winter 1989), pp. 1 – 12.

[47] Lumpkin, James R. and James B. Hunt, "Mobility as an Influence on Retail Patronage Behavior of the Elderly: Testing Conventional Wisdom," *Journal of the Academy of Marketing Science*, *12* (Winter 1989), pp. 1 – 12.

[48] Burnett, John J. and Alan J. Bus, "Profiling the Yuppies," *Journal of Advertising Research*, *16* (April / May 1986), pp. 27 – 35.

Physical and Occupational Mobility / Financial Optimism

Consistent with the belief that a person's ridership or propensity to ride is associated with their socioeconomic status, the extent to which an individual is or perceives themselves to be physically or occupationally mobile may also be linked to ridership and/or attitudes toward using public transportation. To test this, a scale to measure the extent to which an individual perceives themselves as physically and/or occupationally mobile was included. This multi-item scale has been used in many studies but appears to have been originally developed for the classic study of psychographics by Wells and Tigert.[49]

In the last ten years, I have lived in at least three different cities.

I expect to be a top executive in the next ten years.

Five years from now my total household income will probably be a lot higher than it is now.

Frugality

There is a long-established association between ridership and an individual's socioeconomic status. It was hypothesized that this association might also be translated into a values and lifestyle characteristic – specifically how frugal a person considers himself / herself to be. A four-item scale was used to measure this association. This scale was taken from work by John Lastovicka that examines lifestyle segmentation as it relates to drunk driving behavior.[50] The original scale was actually a multi-dimensional scale. One dimension focused specifically on discipline, or the extent to which an individual practices frugal behavior.

I believe in being careful how I spend my money.

Personal Control and Responsibility

Transit research has shown that a major barrier to transit ridership is concern about the extent to which a person must rely on the system to get them where they want to go on time. Many factors drive this concern. However, the extent to which a person feels they must be in control appears to be the primary consideration. Therefore a series of questions used in other transit studies – notably ones conducted by King County Metro (Seattle), Tri-Met (Portland), and Caltrans – were combined to create a schedule to measure the extent to which an individual values personal control.

I always schedule my time so that I arrive at my destination a few minutes early.

It is very important to me not to have to rely on other people.

Fearfulness

Comments from qualitative research suggest that many people do not ride public transportation because they are worried about their personal safety. However, crime and safety statistics clearly show that there is little evidence to support concerns about personal safety when using transit. Instead, it is believed that a person's general level of fearfulness in conjunction with other attitudes leads to an overall predisposition to use public transportation. A three-item scale to measure a person's feelings about their security / safety was included.

I worry a lot about myself or a family member becoming a victim of a crime.

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[49] Wells, William D. and Douglas Tigert, "Activities, Interests, and Opinions," *Journal of Advertising Research* (August 1971), pp. 27 – 35.

[50] Lastovicka, John, unpublished paper.

Cleanliness

As with fearfulness, comments from qualitative research suggest that many people do not ride public transportation because they believe that buses are dirty and/or that people on the bus are dirty. Again, evidence does not support this perception. Instead, it is hypothesized that an individual's level of comfort with large public environments in general may be the motivating factor. To test this assumption, a four-item scale to measure an individual's general attitudes toward cleanliness was included.

I am uncomfortable when I am in places that are not totally clean.

Benefits Sought and Perceptions of Benefits Delivered

The majority of research conducted by transit agencies has focused on riders' and, to a lesser extent, nonriders' perceptions of service quality. The emphasis, therefore, has been on measuring satisfaction with specific aspects of transit service – for example, on-time performance, helpfulness of drivers, and usefulness of information. In some instances, agencies have also included measures of the importance of these same aspects of transit service. Comparisons of satisfaction and importance enables one to develop a matrix that measures the extent to which performance meets customer expectations (as measured by importance or some other scale). While useful for day-to-day service planning and determining where to best place resources for service quality improvement, these measures provide little insight into what is required to increase ridership. This is particularly true among nonriders who may have difficulty answering these types of questions because of lack of direct experience. Moreover, there is no evidence to support that improvements in service quality will cause nonriders to ride.

In other instances, some agencies have explored barriers to ridership. Again, this information may provide some useful insight into day-to-day service planning. For example, finding out that not being able to get home easily in case of an emergency has led to the development of "guaranteed ride home" programs in many markets. However, again the assumption is made that simply removing a barrier will lead to an increase in ridership.

Literature on "benefit segmentation" suggests that two components should be measured: (1) the benefits sought (product-benefit importance), and (2) the extent to which those benefits are delivered (brand preferences).[51, 52] The combination of these two factors – that is the extent to which a product or service delivers the most primary benefits desired – forms one's attitudes toward a product or service.

Two factors were carefully considered in the design of the questionnaire: (1) what specific benefits to include, and (2) how to operationalize the constructs.

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[51] Haley, Russell I., "Benefit Segments: Backwards and Forwards," *Journal of Advertising Research*, 24 (February / March, 1984) pp. 19 – 25.

[52] Green, Paul E., Abba M. Krieger, and Catherin M. Schaffer, "Quick and Simple Benefit Segmentation," *Journal of Advertising Research*, 25 (June / July, 1985), pp. 9 – 15.

To address the first factor – that is, what specific benefits to include – available transit research was reviewed to generate a comprehensive list of possible benefits that are sought in deciding how to travel. A list of twenty-nine individual attributes was ultimately identified. Some examples follow:

> *I can count on it to get me to where I am going on time.*
> *I can control my own schedule.*
> *It is appropriate for a person in my position.*
> *It gets me to and from where I want to go without feeling stressed.*
> *I can get other things done while traveling; it's not just dead time.*
> *It gets me where I am going the quickest way possible.*
> *It is conveniently located to my trip origin and destination.*
> *It does not cost much.*
> *I don't have to worry about wear and tear on my vehicle.*
> *I am assured of my personal safety from crime.*
> *It is comfortable.*
> *It is clean.*
> *I don't have to get out in inclement weather.*
> *It is good for the environment.*

In many instances, transit research has focused on identifying what is important in deciding to ride the bus. For example, a question might read, "Please tell me how important each of the following are in deciding whether to ride the bus?" There are two problems inherent in this question. First, it assumes that riding the bus is part of the decision set for everyone. However, many transit studies suggest that in most cases, people simply do not think of using public transportation – that is, riding the bus is not in their evoked set. Second, this question looks at transit in isolation. That is, it ignores the competition.

Therefore, to measure the second construct – benefits sought – respondents were asked to evaluate the importance of these twenty-nine items. The introduction to the question reads as follows:

> *Different people consider different things important when deciding whether to drive or to use transit for local travel. As I read the following list, please tell me how important each item is to you in the method of transportation that you use. Please answer on a 7-point scale where "1" means "not at all important" and "7" means "extremely important."*

Operationalization of the second construct – the extent to which those benefits are delivered – was introduced as follows. Respondents rated the same twenty-nine items.

> *Now based on your personal experience or anything you have seen, read, or heard, please tell me how well you think these same statements describe using public transportation. Please answer using a 7-point scale where 1 means the statement "does not describe public transportation at all" and 7 means the statement "describes public transportation very well."*

Involvement with the Mode Choice Decision

Much transit research suggests that the mode choice decision is a relatively low-involvement decision. That is, when making a trip, few people make a conscious decision as to whether to drive or use transit for that trip. Instead, most simply use the mode they are most accustomed to or that they always use for that trip. To test this hypothesis, a set of questions measures the extent to which an individual is involved with the mode choice decision.

Scales to measure consumer involvement were originally developed by Laurent and Kapferer[53] and Jain and Srinivasan.[54] Both sets of authors had developed multi-item scales to measure the perceived importance and risk of the product class, the subjective probability of making a mispurchase, and the level of interest or the extent to which an individual has an enduring relationship with the product class.

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[53] Laurent, Gilles and Jean-Noel Kapferer, "Measuring Consumer Involvement Profiles," *Journal of Marketing Research*, 11 (February, 1985), pp. 41 – 53.

However, these scales were very lengthy, having as many as sixteen items to capture the different dimensions. Moreover, some dimensions were believed to be less relevant to the mode choice decision. A shorter version of these scales, as developed by Foote, Cone, and Belding was used. The FCB Involvement Subscale (FCBI) views involvement as implying personal importance (i.e., relevance) and consequent attention to an object or product.[55]

During this period, Northwest Research Group was testing a shortened (four-item) version of this scale in another study. Responses to this scale can be combined to reflect the extent to which an individual is involved with the mode choice decision and the degree of risk associated with the decision – for example, high involvement / low risk, high involvement / high risk, low involvement / low risk, and low involvement / high risk).

Would you say the decision to use public transportation is an important decision or an unimportant decision?

Would you say the decision to use public transportation is a decision that requires absolutely no thought at all, very little thought, some thought, a great deal of thought?

If you decide to use public transportation, would you say there is nothing to lose if you make the wrong decision, little to lose if you make the wrong decision, something to lose if you make the wrong decision, a lot to lose if you make the wrong decision?

How sure are you about the ability of public transportation to perform satisfactorily?

Attitudes Toward, Preference For, And Intention To Use Public Transportation

As denoted in the model, several factors combine to create an overall attitude toward, preference for, and intention to use public transportation. The following types of questions were included to obtain measures of these constructs.

Transit Use

One such factor is the extent and nature of an individual's personal experience with public transportation generally, and specifically with public transportation in the area in which they live. Questions were included to measure the extent to which an individual has used or considered using transit in the past.

Several questions in the screening section of the questionnaire covered transit use in the past year. Persons who had ridden in the past year were asked questions regarding the nature of their transit trip.

Persons who had not ridden in the past year were asked questions regarding consideration of and past use of transit.

Awareness of Transit

Another factor is the extent to which an individual is aware of and familiar with transit services. Awareness is a function of marketing and word-of-mouth communications. News stories published or broadcast in the media are considered a form of word-of-mouth communications, as they are not under the direct control of the marketer. Two questions

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[54] Jain, Kapil and Narasimhan Srinivasan, "An Empirical Assessment of Multiple Operationalizations of Involvement," in *Advances in Consumer Research*, Vol. 17, Marvin Goldberg, Gerald Gorn, and Richard Pollay (eds.) Provo, UT: The Association for Consumer Research (1990). pp. 594 – 602.

[55] Ratchford, Brian T., "New Insights About the FCB Grid, "*Journal of Advertising Research*, 27 (August – September (1987). pp. 35 – 38.

were included to measure the extent to which a respondent believes himself / herself to be aware of and informed about public transportation services.

Preferences for Public Transportation

Several questions were included to measure preferences for using public transportation over driving a car. These questions were drawn from surveys conducted by different transit agencies. The first set of questions examined the general appeal of using public transportation in different situations.

> *In general, how appealing or unappealing to you is the idea of using the bus instead of driving to work or school?*
>
> *In general, how appealing or unappealing to you is the idea of using the bus instead of driving for your personal travel?*

A more specific question to measure preference for public transportation was also included.

> *If offered a choice between convenient public transportation and taking a car, would you always drive a car, sometimes use public transportation, or always use public transportation?*

A final question further measures specific preferences for public transportation compared with driving a car.

> *Please assume that driving alone or using public transportation are the only options available. Both are equally accessible to you. If you had a total of 100 points to divide between the two options and the higher amount is given to the method you prefer, how many points would you give to public transportation / driving alone?*

Intentions to Use Public Transportation

Next, questions were included to measure respondents' intentions to use public transportation in the next year given different situations.

> *Thinking about different methods for getting around, how likely are you to use public transportation to make the following trips in the next year?*
>
> *Commuting to work or school*
> *Shopping*
> *Special events, such as sporting events or fairs*
> *Medical or other appointments*
> *Cultural events*

Facilitating and Other Environmental Factors

Finally, as the model suggests, individuals who have positive attitudes toward public transportation and/or would prefer using public transportation often do not do so. This may be due to intervening factors that make it difficult or impossible to use transit. On the other hand, individuals who have negative attitudes toward public transportation and/or would prefer driving alone often use transit because intervening factors make using transit a more viable alternative. Therefore, questions were included to identify the nature of these factors and the extent to which they influence final behavior.

Access to Service

Access to service is a major factor that affects transit use. In some cases, this is a very real barrier. That is, transit service is simply not available from where a person lives to where they need to go. In other cases, this may be a perception. For example, transit service is available but people do not think it is available because either they are not aware of the service or because they do not feel the service would work for them.

Several questions were included to determine the extent to which respondents have reasonable access to service, including availability of service, distance from home to bus stop, train station, and/or park-and-ride lot, distance from bus stop or train station to work, and the need to transfer.

To the best of your knowledge, how far is it from your home to the nearest bus stop?

To the best of your knowledge, do you currently have bus or train service available from where you live to where you work / attend school?

To the best of your knowledge, how far is from where you work / attend school to the nearest train station?

[Would / Does] the route you [would need to take / take] from where you live to where you work or attend school require transferring? [If yes] How many transfers?

Trip Characteristics

The nature of the trip also influences transit use. For example, research has suggested that the length of the trip – in distance or time – is a factor that affects transit use for that trip. This is notable for commute trips. The research suggests that commuters travelling less than five to ten miles are less likely to use transit than those experiencing longer trips. Commuters were asked the distance (in miles) they travel from home to work or school one-way.

Perceptions of service, notably as it relates to travel time by bus or train compared with that by car, influences transit use. Current research suggests that riders will accept travel times by bus or train up to two times longer than that by car. Nonriders are less tolerant of longer travel times and in many instances are demanding travel times by public transportation equal to or less than that by car. The following questions were included for commuters:

On a normal day, about how long [does] [would] the trip to work/school take from door to door from the time you leave your house until the time you get to work or school if you drive alone?

How long [does] [would] it take by bus?

How long [does] [would] it take by train?

Finally, as land use patterns have changed, where an individual lives and/or works has increasingly influenced use of public transportation. Many people have chosen to live in areas where providing transit is difficult. Similarly, major employment sites have moved away from central business districts to suburban areas. Transit service may be limited or unavailable. On the other hand, employees simply prefer to drive, as there is little incentive to use public transportation (e.g., low parking costs). Questions were included to measure the direction of their commute.

Do you live in a central city or downtown area or a suburb or suburban city?

Do you work in a central city or downtown area or a suburb or suburban city?

Congestion

The extent to which an individual encounters congestion on their typical trips has increasingly become a factor that facilitates transit use. That is, as congestion increases and travel time by cars increase, transit becomes a more attractive alternative. Two questions assessed the impact of congestion on ridership and/or predisposition to ride.

How much is your commute trip affected by congestion?

How much is your daily nonwork travel affected by congestion?

Parking

Similarly, the availability and/or cost of parking are factors that facilitate transit use. That is, as parking costs increase and/or parking becomes less available people are more likely to consider transit as a viable alternative to driving alone. Two questions were included to assess the impact of cost and availability of parking on ridership and/or predisposition to ride.

How often do you change your travel plans or not take trips because of the cost of parking at the destinations where you would like to go?

How often do you change your travel plans or not take trips because of the availability of parking at the destinations where you would like to go?

For commuters, the extent to which employers subsidize parking can be a barrier to or facilitator of transit use. That is, in those cases where employers do not subsidize parking and daily parking costs are high, public transportation is an attractive alternative. On the other hand, when employers subsidize parking and/or employees can find alternatives for low cost parking, there is less incentive to use public transportation. Several questions were asked of commuters to assess the extent and the nature of subsidized parking.

Employer Support

In recent years, some employers have been increasingly supportive of employees using public transportation. Many have begun to offer programs and other assistance to enable employees to use transit. Commuters were asked whether their employer participated in a number of programs designed to encourage use of public transportation or other alternative modes.

Does your employer. . .
    Offer a program to pay for some or all of the transportation costs for employees who ride the bus.
    Provide a car to use for work purposes during work hours.
    Sell bus or rail passes.
    Provide bus or rail information on routes and schedules.
    Allow bus / train riders the use of a company car during the day to run personal errands.
    Assist in forming carpools and vanpools.
    Provide bike racks, showers, and lockers.

Job Characteristics

Finally, the nature of one's job can represent barriers to using public transportation. In some cases, they are real barriers (e.g., in cases where an employee starts and/or finishes work during hours when bus service is not available). In other cases, they are perceptual or created barriers (e.g., the idea that running errands on the way to and from work keeps one from being able to ride transit). Questions were included to study the impact of an individual's work characteristics on ridership and/or propensity to ride.

What time do you typically arrive at work? What time do you typically leave work to travel home?

How often does your job require you to. . .
    Work regular hours?
    Use your own personal automobile for work-related travel during the day?
    Work overtime hours?

Does your job allow you to. . .
    Work flexible hours?
    Work an alternative work schedule?
    Telecommute?

How often do you. . .
    Leave work during the day to eat lunch at places farther from your place of work than you can walk?
    Leave work during the day to run errands?
    Drop off and/or pick up children at day care / school on your way to / from work?
    Run errands on your way to / from work?

Pretesting

Pretesting is an important part of any questionnaire design process. Because of the extent to which scales are used in segmentation analysis – notably in psychographic and benefit segmentation studies – pretesting takes on several unique aspects.

The primary question that is asked of questionnaires and scales used in segmentation analysis is the extent to which the scale reliably or consistently measures the larger construct. Reliability can refer to two types of consistency. The first is whether results would remain the same if the same individuals were "tested" and "retested" with the same questions. The second is consistency between groups of similar respondents. Determining reliability is not the same thing as investigating validity. The validity of a measurement refers to how closely it in fact reflects some "reality." However, since a nonreliable measure cannot be valid, reliability puts an upper limit on validity. Much of the focus in pretesting segmentation questionnaires is on testing reliability. Validity is a much more difficult aspect of the questionnaire to assess.

Several approaches to assessing reliability exist in the social sciences. None of these methods get much use in market research, largely due to cost and time considerations. It is important to budget for these additional costs and time when conducting a segmentation study. These are the principal ways in which reliability gets measured.

- **Test-retest reliability** involves applying the same measure to the same objectives (or respondents) a second time. Because of increasing difficulty of completing even one study in market research, this form of investigation remains quite rare.
- **Alternative-forms reliability** involves measuring the same objects by two instruments designed to be as nearly alike as possible. Generally, only one form gets used in market research. In some surveys, differences between versions may consist solely of "rotation" of items to reduce "position or order bias." This is not at all the same as using alternative forms that contain different questions.
- **Internal-comparison reliability** involves comparing responses among the various items on a multiple item battery, in which several questions are designed to measure the same thing. This form of testing is frequently used to measure the extent to which the individual items in a scale correlate to the broader construct they are designed to measure. It is also useful in determining what individual items need to be included in the scale and can be used as a device to shorten the overall questionnaire length by eliminating redundant scale items or those that do a poor job of measurement.

This latter form of reliability testing was used extensively in the design of the scales ultimately used in the questionnaire.

Collecting the Data

As noted in Chapter 2, nearly all segmentation analysis requires the collection of primary data – that is, data obtained directly from the target population and collected for the specific project at hand. There are many methods for collecting this data, each with its distinct advantages and disadvantages. Again, it is beyond the scope of this guidebook to go into details about different data collection. The reader is urged to refer to other sources, including the handbook developed for TCRP Project B-2 – *Integrating Market Research Into Transit Decision-Making*.

In selecting the data collection method for segmentation analysis, two factors frequently drive this decision:

- **The sample design and sampling procedure selected**. Notably, the need for random sampling procedures to insure the ability to project the results of the research to the general population may indicate the most appropriate data collection method. Telephone interviewing – notably computer-assisted telephone interviewing (CATI) – is the data collection method that represents the greatest opportunity for administering a truly random sample.

- **The questionnaire**. Questionnaires for segmentation analysis are generally longer than average and quite complex. The ability to randomize the order of the scale items – to prevent response order bias – and the possibility for complex skip and/or branching patterns often dictates the use of telephone or face-to-face interviews. Again, the use of computers – either computer-assisted telephone interviewing or computer-assisted self-administered questionnaires – can greatly enhance the reliability of the data that is gathered.

Some segmentation studies purport to use qualitative data collection methods – for example, focus groups. The results of such methods can never be projected to the general population and should be considered strictly exploratory in nature. These methods, however, are often very useful to pretest the questionnaire.

Computer-assisted telephone interviewing was selected for this project for the following reasons:

- The ability to develop and administer a random sample of households in each market to insure projectability of the data to the target population.

- The ability to program the questionnaire administration so that the scales could be delivered to the respondent in a random order, thereby eliminating any kind of order bias. The questionnaire also contained complex skip and branching patterns for several groups of respondents including riders and nonriders, and commuters and noncommuters. These skip and branching patterns could be programmed so that the questionnaire could be administered smoothly and accurately.

- The ability for trained interviewers to encourage respondents to complete a long – 39 minute – and complex survey.

- The ability for the computer-assisted telephone system to handle callbacks – both random and scheduled callbacks. This was particularly important because of the length of the survey instrument. Many appointments were scheduled with interested respondents so the interview could be completed at a mutually convenient time.

- The ability to monitor the administration of the questionnaire by trained supervisors to insure a consistency of delivery when interviewing a great many respondents – over 3,000 – in different markets.

Analyzing and Interpreting the Data

Once the data has been gathered, it must be analyzed to provide meaningful information to the end user of the research – the marketer, service planner, or general manager. However, data analysis should begin before the data is collected. To maximize the value of the findings, the researcher should have a clear idea of what is being sought. An analysis plan should be developed. Then, the specific data analysis tools can be selected. Because of the complexity of data analysis and the use of multivariate statistical methods that are not commonly used, outside assistance is frequently needed at this stage of the project.

An analysis plan, as its name implies, is an overview of the steps to be taken to analyze the data once it has been collected. The plan typically specifies what should occur at each of the following stages:

- **Coding and Data Preparation**. Coding simplifies further analysis by classifying responses into predetermined categories. Somewhat unique to segmentation analysis is the significant amount of other data preparation that must be completed prior to forming the segments. For example, factor analysis might be performed to determine natural groupings of variables that can be combined to create a new measure. The individual variables contained in psychographic scales are often combined to create an overall measure of the psychographic dimension. Standardizing variables before subjecting them to clustering procedures usually makes sense. This is because differences in the scales of variables can influence the results from many clustering procedures. Depending on the sample design used, data may also need to be weighted.

- **Segment Formation**. Many procedures exist for identifying market segments. A listing in the Appendix provides a non-technical summary of the major multivariate procedures that are often used in segmentation analysis. At this stage, practicality is of the essence. A complex segmentation model is not advisable if a simpler design adequately provides the required information.

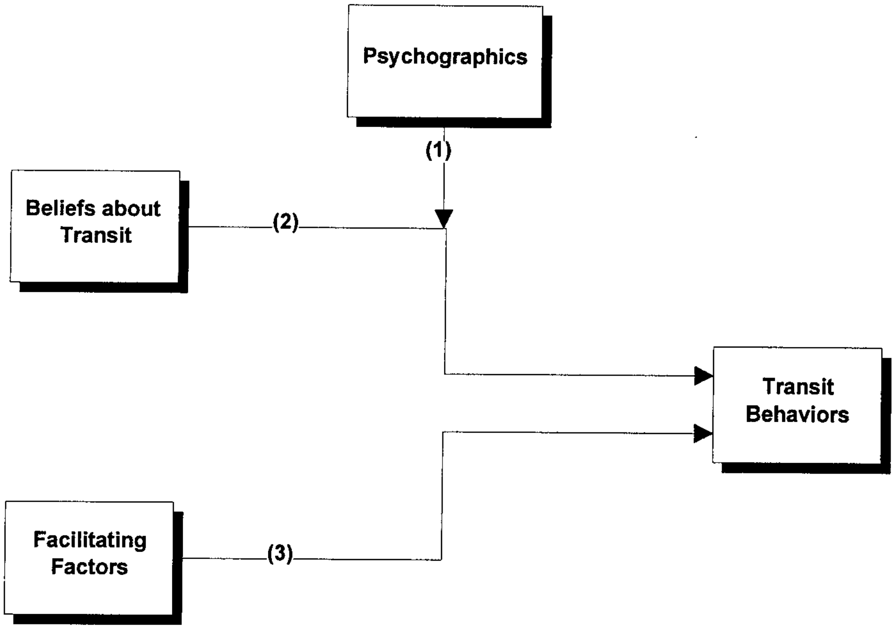
- **Tabulation**. Once the segments have been formed, additional tabulation is needed to assess the general relationships between the segments and other key marketing variables. One of the most basic data analysis techniques available, cross-tabulations extend the value of tabulation by studying inter-relationship among groups of marketing variables. Banner tabulations – multiple cross-tabulations on a single page – provide an easy reference for those users of the information that want to see how each segment responds to each and every question in the survey instrument.

Following is an excerpt from the analysis plan developed as part of this research effort.

Overall Approach for Lifestyle Segmentation

The data from the system interviews will be analyzed to develop and validate the general lifestyle approach to predicting transit usage. The analysis consists of several parts. The first part involves identifying from the many proposed variables those that most relate to transit usage. This stage also involves determining if there are any redundancies. Given that most variables were evaluated in the measure development phase, it is expected that few variables will prove to be unrelated to the model. The remaining predictor variables will be grouped into one of three broad groupings, (1) psychographics, (2) beliefs about transit, and (3) facilitating factors. The criterion variable will be transit usage, which is a combination of everyday and special circumstance uses of public transit.

The chart below summarizes the groupings and analysis methods.



Values and Lifestyle Segmentation

Analysis of the data to estimate the model's parameters begins with an individual's values and lifestyle characteristics. The view is that an individual's ridership and/or predisposition to ride is largely driven by their values and lifestyle.

That is, responses to the transit system as perceived by the respondent are assumed to be governed by the individual's values and lifestyle. For example, perceptions that transit is or is not safe will affect behavior differently depending on the individual's perceived vulnerability. Individuals who are especially worried about their safety will avoid using a transit system whenever there is even a slight chance of danger, whereas individuals not especially worried about their safety may continue to use the system even though they recognize that some risk is present.

The lifestyle segments will be developed using the LOV scale and the sixteen lifestyle scales. The sum of the items in the scale will be used as the variable's measured value rather than factor or component scores. Summing the items in the scale more effectively retains the needed information.[56] Means will be substituted for missing values. A cluster procedure will be used to group individuals into homogenous segments.

The clusters will be described in terms of their values and lifestyles. Moreover, the demographic and/or geodemographic characteristics of the individual segments will be assessed to provide a clear profile of the different groups.

This analysis will be conducted on a system by system basis to determine whether there is any consistency in the resulting clusters. Moreover, samples from all systems will be

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[56] Dillon, William R., Narendra Mulani, and Donald G. Frederick, "On the Use of Component Scores in the Presence of Group Structure," *Journal of Consumer Research*, 16 (June, 1989), pp. 196-212.

combined to determine if a single cluster solution can be identified that satisfies the criteria for effective market segmentation. In this latter approach, clustering will be done on a split-half-validation basis to determine if the solutions tend to replicate.

Beliefs about Transit

The second stage of the model focuses on individual's beliefs about transit. The view is that individuals base their decisions in part on their perceptions of the transit system. These perceptions reflect both the actual operations of the system and indirect information about the system. The latter includes word of mouth, mass media news stories, and transit promotions. It is expected that individuals will consider the pros and cons of using the transit system and make a rational decision about whether to use it or not. The responses to the questions on benefits sought and perceptions of transit will be combined to develop a transit belief variable. These variables will be factor analyzed to determine what, if any, underlying constructs exist.

The resulting variables from the factor analysis, along with the variables measuring general beliefs about transit and current or past use / consideration of transit will be compared across the clusters identified above. This analysis will identify which, if any, of the clusters evidence the highest existing ridership and/or propensity to ride.

Facilitating Factors

Finally, it has been observed that individuals may share similar beliefs about transit and yet engage in different behaviors. The model attributes some of this to factors not under the control of the individual that may override individual preferences. The availability of employer provided parking and service availability in the individual's area represent two such factors. These factors are assumed to have a direct effect on transit usage.

Existence of facilitating factors will be explored across the different clusters to further identify which clusters represent the greatest potential for ridership.

Conducting the Analysis – Psychographic Segmentation

As the analysis plan suggests, one phase of the analysis identified segments based on psychographics – that is, life style and psychological variables. This analysis identified five market segments that satisfied the following criteria for market segmentation:

- The segments must be large enough to be profitable.
- The segments must be identifiable.
- The segments must be reachable by media.
- The segments should respond differently to the marketing mix.
- The segments should be stable in terms of size.
- The segments should be reasonably cohesive. That is, the members should behave in as much the same way as possible.
- The segments should be growing.

- The segments should not be so dominated by competitors to make it unlikely that your product can be successful.

The analysis consisted of the following steps:

- Combined variables were computed to reflect each of the nineteen psychographic characteristics – susceptibility to interpersonal influence, arousal seeking tendency, innovativeness, time management, general environmental concern, socially responsible consumption behavior, automobile involvement, locus of control, self-confidence, fearfulness, cleanliness, sociability, frugality, personal control, responsibility, physical mobility, occupational mobility, financial optimism, and role overload. The List of Values was treated as individual psychographic variables.

- These twenty-eight variables were then centered and standardized. The purpose of this process is to remove the effects of different scale responses.

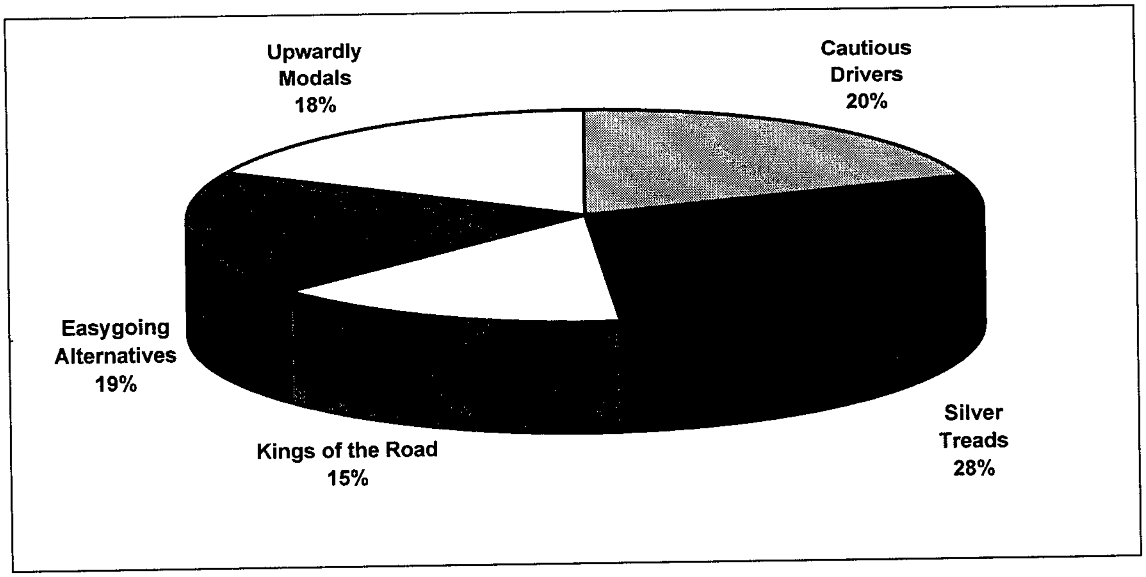
- Following this process, all variables were analyzed using a clustering procedure called Convergent Cluster Analysis. Convergent Cluster Analysis is a software program used for developing cluster-based solutions for market segmentation. Survey information on product preferences, desired benefits, usage habits, product requirements, attitudes, values and lifestyles, or other variables are used to explore the underlying structure of your market. The replication offering the greatest reproducibility was selected for further analysis.

- Further analysis consisted of basic cross-tabulations and CHAID (Chi-squared Automatic Interaction Detector) to better understand the characteristics of the individual segments.

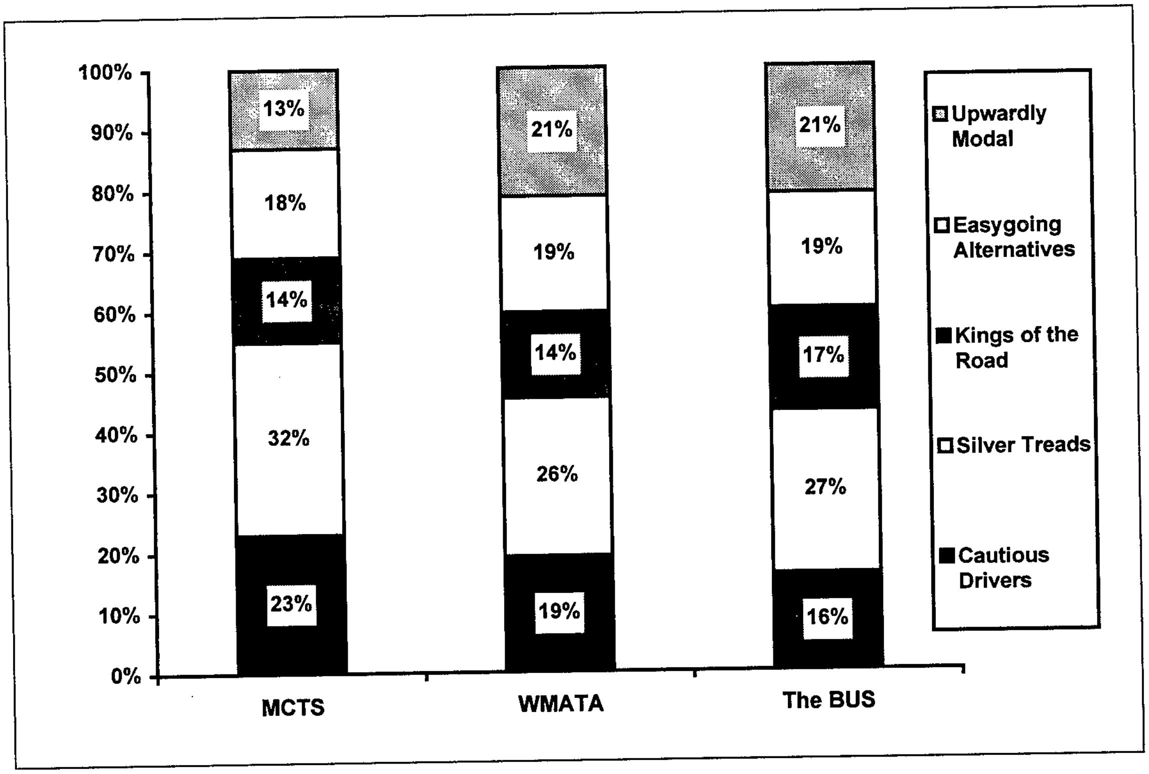
Using the clustering procedure described above, five market segments were identified – each having a unique psychographic profile. Further analysis also indicated that each of these five segments have different demographic characteristics, attitudes toward transit, needs for transportation that must be satisfied, and potential for using public transportation. Each segment was given a "name" to represent these unique sets of characteristics.

Two segments – Easygoing Alternatives and Upwardly Modals – represent markets that should be considered Intenders – that is, they are the most likely markets to use or consider using public transportation. Intenders represent 37 percent of the total market for choice riders.

The remaining three segments – Cautious Drivers, Silver Treads, and Kings of the Road – represent markets that are Avoiders – that is, they are least likely to use or consider using public transportation. Only Cautious Drivers represents any potential for use of some alternative mode. Avoiders represent 63 percent of the total market.



The size of the segments differs in the three market areas, with MCTS having an above average incidence of Cautious Drivers and Silver Treads. WMATA and The BUS have an equally high incidence of Upwardly Modals.



In addition to having an unique psychographic profile, each segment also differs in terms of demographic characteristics, their attitudes toward transit, their propensity to ride, and the presence and/or absence of facilitating factors for ridership. These characteristics are described in detail on the next pages.

Segment	How do I think and feel and live?	Who am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Cautious Drivers	Cautious Drivers consider the world a dangerous place and are concerned about their and their family's personal safety. Cautious Drivers prefer environments that are comfortable and clean. Being in a dirty place gives them the "heebie-jeebies." Cautious Drivers like to drive their cars. Driving gives them a sense of personal space, and insures their safety and a comfortable environment. Susceptible to influence, they base their decisions on what others are doing. Moreover, they often seek advice before making decisions. Cautious Drivers have many demands on their time and their life is overburdened. They hate wasting time and take steps to manage their time carefully. While holding the same job and living in the same place for many years, Cautious Drivers are optimistic about the future. Cautious Drivers are not highly motivated by life values such as self-fulfillment, a sense of accomplishment, a sense of fun and enjoyment out of life.	Cautious Drivers generally mirror the demographic profile of the target population with a few notable exceptions. While the average age of Cautious Drivers is 43 years, an above-average incidence (61%) is between the ages of 18 and 44. Cautious Drivers are typically high school graduates or have some college education. Cautious Drivers are less affluent than other segments. There is an above average incidence of ethnic minorities in this segment.	Cautious Drivers are generally neutral in their attitudes toward public transportation – that is they find the idea of using transit neither appealing nor unappealing. While this segment rates public transportation most positively overall, they see substantial gaps in transit's ability to deliver the benefits they seek in terms of general travel characteristics.	Current ridership is average – but if Cautious Drivers ride they are the most likely to be frequent riders who use transit to commute. If Cautious Drivers currently do not ride, they are the least likely to have ridden in the past. Cautious Drivers represent moderate potential for ridership in the future.	Cautious Drivers are the most likely to say their commute travel is affected by congestion.

Segment	How do I think and feel and live?	Who am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Silver Treads	Silver Treads like to be in control of their life and schedule their time to stay in control. Despite this need for control, their time is not particularly overburdened. Silver Treads place a high degree of importance on security, being well-respected, and a sense of belonging Conversely, they do not look for stimulation or excitement in their lives. Silver Treads exhibit a high degree of frugality. They are not particularly mobile – having lived in the same area and held the same job for many years. Silver Treads are the least involved with their automobile, seeing it as simply a means of getting to where they need to go.	Silver Treads are more often female (73%) than male (27%) Average age 55 years – highest incidence of those 55 plus. Lowest educational achievements Many are retired. If married, their spouses are also likely to be retired. Consistent with their age, their household size is smaller than average. Silver Treads are a less affluent market segment.	Like Cautious Drivers, Silver Treads are generally neutral in their attitudes toward public transportation – that is they find the idea of using transit neither appealing nor unappealing. Silver Treads place a great deal of importance on being in control, comfortable, and safe when deciding what mode of transportation to use. They see significant gaps between what they need in terms of transportation – control, comfort, and safety – and transit's ability to deliver.	Silver Treads have the lowest incidence of current ridership. If they ride, they ride infrequently (less than once a month) and they taking non-commute trips (e.g., to appointments or special events. Silver Treads suggest relatively low potential for future ridership.	Silver Treads are the least likely to have transit service available from their home to where they work or go to school. This reflects the fact that many live and work in a suburban location. Silver Treads are the least likely to work for an employer who pays for transportation costs for employees who ride the bus. On the other hand, they have some job characteristics that facilitate their use of public transportation. Silver Treads generally work regular hours. However, an above-average proportion works second or graveyard shifts. They rarely or never work overtime. Finally, they generally do not leave work during the day and go straight home from work.

Segment	How do I think and feel and live?	Who am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Kings of the Road	Kings of the Road are our community and industry leaders. They have confidence in their ability to make things happen. Kings of the Road are not afraid of life and what it will throw at them. They place high degree of importance on a sense of accomplishment Kings of the Road are occupationally mobile – but they are already high achievers. They schedule their time carefully – but not because their time is overburdened. Kings of the Road are the least environmentally conscious segment and the least likely to practice socially responsible consumption behavior.	More often male (56%) than female (44%). Kings of the Road are middle aged. The majority is between the ages of 35 to 64 – their average age is 45 years. Married, many have children in the household. The majority of Kings is employed full-time or is self-employed. They work in professional and technical positions. The most affluent segment, they are generally well educated. Kings of the Road have the highest degree of auto availability. They like to drive and believe that driving gives them time to relax.	Kings of the Road feel decision to use transit is low risk but also relatively unimportant – it is simply something they don't think about. If offered a choice between transit and driving Kings of the Road will always drive – but not because they find transit unappealing. Kings of the Road place the most importance on quality of service and control over one's time when traveling. Moreover, they see the greatest gap between the importance of service / control and transit's ability to deliver. Kings of the Road are least likely to be influenced by pragmatic benefits of using transit – e.g., cost, environment.	Kings of the Road are generally nonriders. Few ride currently and few have ridden in the past. Kings of the Road are the least likely segment to use transit in the future.	Kings of the Road generally live in the suburbs. They are the second most likely segment to say transit service is not available from where they live to where they work. However, they generally commute to downtown locations. While they generally work during regular work hours, Kings of the Road are the most likely segment to work overtime hours or to start or finish work later than regular work hours. Many have to pick up or drop off children on the way to and from work.

Segment	How do I think and feel and live?	Who am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Easygoing Alternatives	Easygoing Alternatives place high importance on excitement, fun and enjoyment of life, and a sense of self-fulfillment. They feel that much that happens in life is a function of luck rather than a function of hard work. Easygoing Alternatives also feel that warm relationships and self-respect are important. They are the most sociable of the market segments. Easygoing Alternatives don't practice a high degree of personal control over what happens in their lives and do not take steps to schedule time carefully. They exhibit the lowest frugality quotient.	More often female (65%) than male (35%). Average age 39 years – above average incidence of those between 25 and 44. If employed, Easygoing Alternatives are employed in professional or technical positions or as managers/administrators. Moreover, they are the most likely segment that if married are members of a two-income household. If they are married, Easygoing Alternatives are the most likely segment to have children at home. Easygoing Alternatives are moderately affluent.	Easygoing Alternatives see the decision to use transit as an important decision. However, they also feel it is high risk and are unsure of transit's ability to perform as they require. If offered a choice, Easygoing Alternatives would sometimes use public transportation. While not particularly demanding in terms of the benefits they seek in the mode choice decision, they see gaps in transit's ability to perform as required.	Easygoing Alternatives are the second most likely segment to have ridden in the past year. Similarly, Easygoing Alternatives exhibit the highest incidence of former ridership. Easygoing Alternatives are the second most likely segment to ride in the future.	Easygoing Alternatives are the most likely to have transit service available from they live to where they work or go to school. The majority works regular hours and only sometimes comes to work early or leaves late. However, they are the most likely to have to drop off or pickup children on the way from work. Often they need to run errands as well.

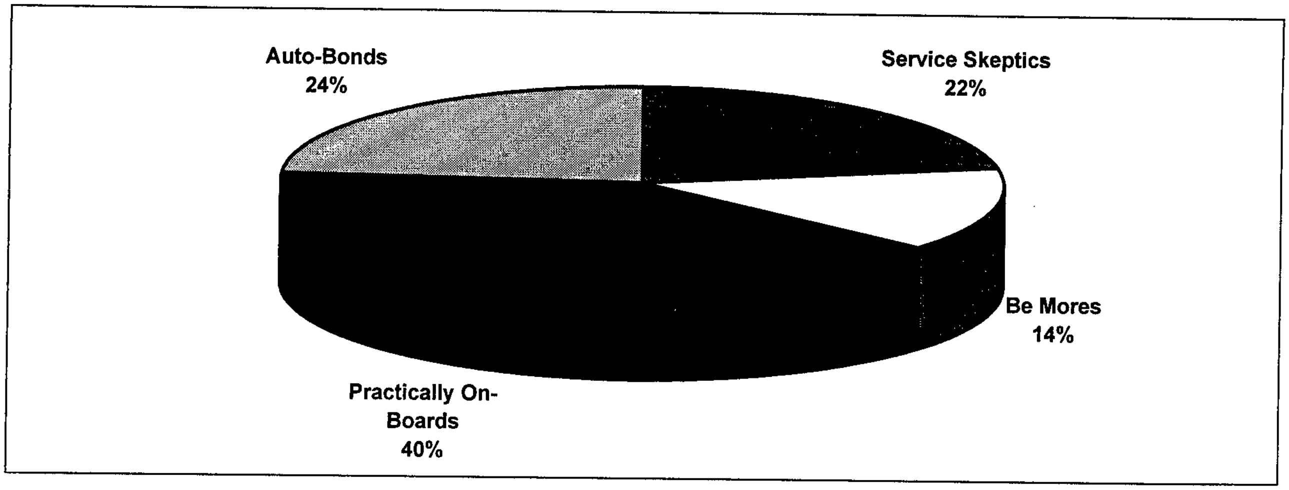
Segment	How do I think and feel and live?	Who am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Upwardly Modals	Upwardly Modals are both physically and occupationally mobile – moving and/or changing jobs in the past several years. They are likely to be community and industry leaders in the future but in a different way than the Kings of the Road. Upwardly Modals like stimulation and are not uncomfortable in different or unusual situations. Upwardly Modals exhibit a high degree of environmental consciousness and practice the highest level of socially responsible consumption behavior. They place low value on security, a sense of belonging, and being well respected. Upwardly Modals are generally comfortable with themselves and others.	More likely to be men (58%) than women (42%). The youngest segment, their average age is 36 years. An above-average number are between the ages of 18 and 34. They are well educated. An above-average number are currently students. Mostly single. If married, their spouses often work. However, an above-average number are homemakers. If employed, Upwardly Modals are typically working in professional or technical positions or employed as managers and administrators. Upwardly Modals are moderately affluent.	Upwardly Modals are the most likely segment to find the idea of using transit appealing – notably for commute travel. They see the least gaps between what is important in the mode choice decision and transit's ability to deliver.	Upwardly Modals are the most likely segment to have ridden in past year. They also high show the highest incidence of former ridership and/or consideration of using transit. Upwardly Modals are the most likely segment to ride in the future – primarily as commuters.	Upwardly Modals generally have transit service available from they live to where they work or go to school. They are the most likely to work in a central city or downtown area. They are the most likely to work for an employer who pays for transportation costs for those employees who use public transportation. Most likely to work for an employer that allows flexible work hours or allows telecommuting. They frequently come to work early or leave late.

Conducting the Analysis – Benefit Segmentation

An alternative basis for segmentation – benefit segmentation – was also employed. The same criteria set for the psychographic segmentation was used. This analysis consisted of the following steps:

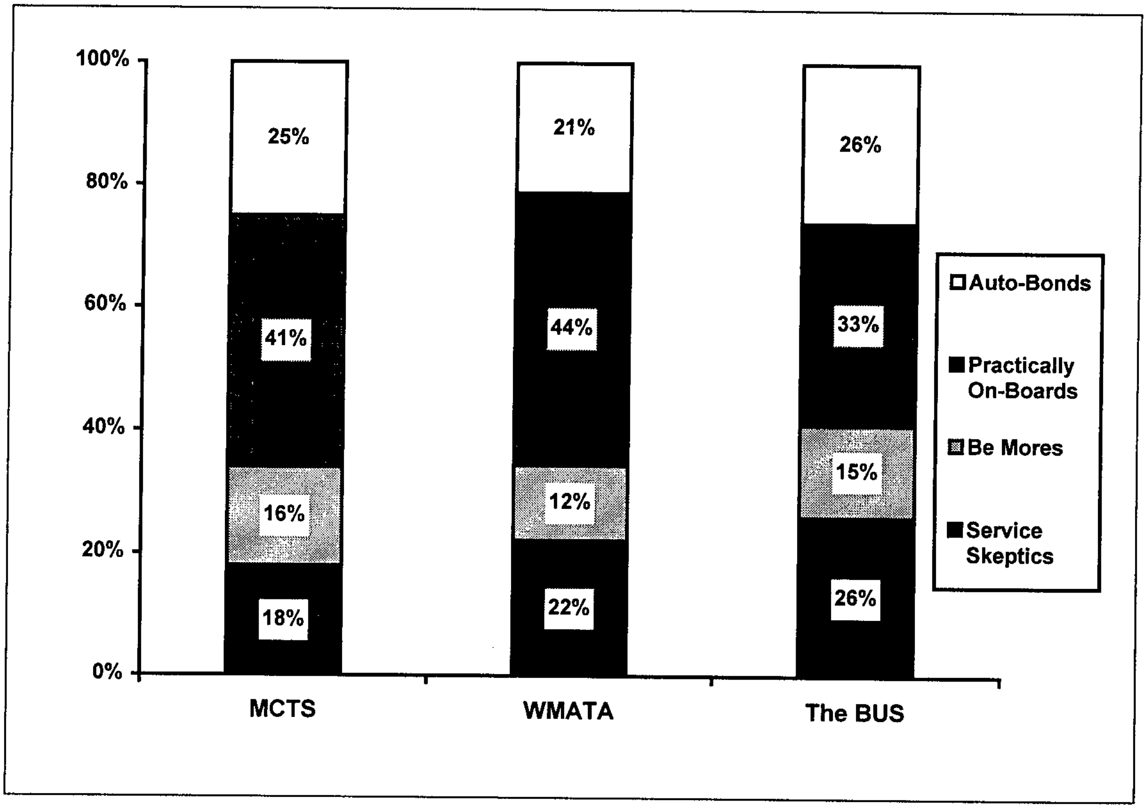
- The questions on the importance of twenty-nine characteristics of mode choice were factor analyzed. Four dimensions were identified. The characteristics that correlated with each dimension and the corresponding descriptors (titles) are shown below.
  - **Service / Control**: I can count on it to get me where I am going on time. I can control my own schedule. It is easy to arrange. I am able to get home in an emergency. I am able to come and go when I want. It offers me the flexibility I need for my schedule. It gets me where I am going the quickest way possible. I do not have to change from one mode to another to get to where I am going.
  - **Comfort / Safety**: It is comfortable. I have a place to sit. It is clean. I do not have to worry about who is going to sit next to me. I do not have to worry about bad weather. I do not have to worry about carrying packages or parcels. I am assured of my personal safety from crime. I am assured that other people will not bother me. It enables me to arrive at my destination feeling clean and fresh, not dirty or grimy.
  - **Pragmatic Benefits**: It is good for the environment. It does not contribute to traffic congestion. It gets me to and from where I want to go without feeling stressed. It does not cost much. It minimizes my risk of getting in a traffic accident. I don't have to worry about wear and tear on my vehicle. I don't have to worry about bad weather.
  - **Image**: It is appropriate for a person in my position. It is consistent with the kind of person I am. It gives me the opportunity to be alone to think. It gets me in the right frame of mind for the rest of the day.
- Variables were computed to reflect these overall dimensions. These were then analyzed using Convergent Cluster Analysis.
- Further analysis consisted of basic cross-tabulations and CHAID to better understand the characteristics of the individual segments.

Four benefit segments were identified and are introduced below. The Practically On-Boards represents the largest segment and the greatest potential for transit ridership. Service Skeptics, while a small segment, are supportive of transit and the concept of alternative modes. As their names suggest, the Be Mores and the Auto-Bonds avoid the very idea of using public transportation.



The size of the segments varies by market area. The BUS has an above-average number of Service Skeptics – representing both a problem and opportunity for increasing use of transit and other alternative modes. This may reflect the current level and nature of service in Boise.

On the other hand, the more mature markets – Milwaukee and Washington D.C. – have an above-average number of Practically On-Boards. Washington has greater penetration of choice riders in this segment – 53 percent of Washington D.C Practically On-Boards are choice riders compared with 38 percent of Milwaukee Practically On-Boards.



While the benefits sought clearly define the markets, they also differ in terms of other characteristics including demographics, lifestyles, travel characteristics, attitudes toward transit, and so on.

Segment	What do I want?	Who Am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Service Skeptics	Service Skeptics look for service and flexibility when selecting their transportation mode. However, they are not as extreme in their needs for service and control as the Be Mores. Service Skeptics are the least concerned with image of mode and comfort / safety when choosing a mode.	Service Skeptics are between the ages of 25 and 44. They are highly educated with the highest incidence of post-graduate degrees. Service Skeptics are married and they are the most likely segment to have children at home. Service Skeptics are employed or self-employed – primarily in professional / technical positions. They are the most affluent segment. Service Skeptics are predominantly white.	Service Skeptics find the idea of using transit very or somewhat appealing – more so for work than nonwork travel. They see the decision to use public transportation as important – but risky. If offered a choice, Service Skeptics would sometimes use transit. Service Skeptics see a substantial gap in terms of benefit sought – service and control – and transit's ability to deliver. Otherwise, they do not see large gaps between what they need and what public transportation can offer.	Service Skeptics have considered or used transit in the past. They would need to be convinced to use public transportation in the future.	Service Skeptics have many barriers to future use of transit. They are the least likely to have transit service available from where they live to where they work. They are the most likely to live and/or work in a suburb or suburban city. Service Skeptics are the second most likely to work for employers who pay for parking.
Be Mores	Highly demanding, Be Mores are looking for a high degree of service and control when selecting mode. Comfort and safety is also an important benefit. Be Mores are least concerned with practical aspects of mode choice.	Be Mores profile the population demographically. Be Mores have the highest rate of full-time employment. They may be managers or administrators but are often in blue-collar or hands-on positions / industries. Be Mores are moderately affluent.	Be Mores find the idea of using transit very unappealing. They show the highest preference for drive alone travel. Be Mores see a significant gap in terms of benefits sought and transit's ability to deliver those benefits.	Be Mores are the least likely segment to ride currently. They are unlikely to ride in the future.	Be Mores are the least familiar with and informed about public transportation in their area. They are the most likely to work for employers who pay for parking. Be Mores often leave work during the day to eat lunch or run errands. They are also the most likely segment also to have to pickup or drop off children on the way to or from work and to run errands on the way to and from work.

Segment	What do I want?	Who Am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Practically On-Boards	Practically On-Boards feel that pragmatic benefits – reducing wear and tear on vehicle, environmental cleanliness, reducing stress, cost – are important when making a mode choice. Practically On-Boards are the least concerned with service / control and safety / comfort.	Practically On-Boards is the oldest segment – average age 46 years. An above-average proportion is 55 and over. Many Practically On-Boards are retired. If employed, they work in clerical or service positions. Practically On-Boards is the least affluent segment. And, they have the lowest auto availability. An above-average number of Practically On-Boards is of diverse heritage.	Practically On-Boards are the most likely to find the idea of using transit appealing – for work and nonwork. They see the decision to use public transportation as important and low risk. However, Practically On-Boards need to be convinced that transit can deliver the pragmatic benefits they demand. This is particularly true for those who currently do not ride and who see a gap between what they want in terms of pragmatic benefits and transit's ability to deliver.	Practically On-Boards have the highest incidence of current riders Moreover, they are the most likely segment to ride in the future – for all types of trips but notably commute trips.	Practically On-Boards are the most familiar with and informed about public transportation in their area. They are also the most likely to say they have transit service available from where they live to where they work. Practically On-Boards typically work in a central city or downtown area. They generally work regular hours and rarely need their car for work-related travel Practically On-Boards are the most likely to suggest that their commute and personal travel is affected by congestion. Many work for employers who subsidize transportation costs for those who use transit.

Segment	What do I want?	Who Am I?	What do I think about public transportation?	How likely am I to use public transportation?	Is it easy or hard for me to use transit?
Auto-Bonds	Auto-Bonds feel strongly that image – mode is consistent with person-image – and personal space – have space or time to think or get ready for the day – are important.	Auto-Bonds generally profile the population demographically. They are the least likely to have children. Like Practically On-Boards, many Auto-Bonds are retired. If employed, Auto-Bonds often work in clerical or blue-collar occupations. Also like Practically On-Boards, Auto-Bonds are somewhat more likely to be members of ethnic minorities.	Auto-Bonds find the idea of using transit very or somewhat unappealing – particularly for work. If offered a choice, Auto-Bonds would drive. They see the decision to use public transportation as unimportant – low involvement. It is simply something they do not consider. Auto-Bonds see a significant gap between benefits sought and transit's ability to fit their self-perception.	Auto-Bonds have the highest incidence of former ridership. They are unlikely to ride in the future.	Auto-Bonds have no factors that notably facilitate or hinder their use of public transportation.

Summary

The required elements of a good segmentation plan include:

1) Insuring management involvement and buy-in by . . .
   - Involving them early in the process.
   - Keeping them informed.
   - Involving them in any decisions along the way.
2) Establishing budgetary constraints by . . .
   - Including both in-house and outside vendor costs in analysis.
   - Recognizing cost / benefit tradeoffs (anticipate expected value of research).
3) Obtain outside assistance as required. Outside assistance is most likely to be required in the design of the research, data collection, and analysis.
4) Establish research objectives that include clear statements regarding the . . .
   - Project background.
   - Project purpose.
   - Research objectives.
5) Specify target population measurements that clearly describe your customers.
6) State relevant definitions regarding . . .
   - Market or service area to be included in the study.
   - Key demographic and socioeconomic classifications to evaluate, criteria for determining benefits or lifestyles, and consumption measures that will be included.
7) Establish criteria for segmentation viability that ensures . . .
   - The market can be ***rated.***
   - The market is ***realistic*** in size.
   - Members of the market can be easily ***reached***?
   - Customers will ***respond*** to marketing initiatives?
8) Develop market segments that. . .
   - Have similar characteristics.
   - Are distinct from other segments..
   - Represent a sizable population.
   - Provide meaningful segment data that is actionable.

9) Select the appropriate bases for segmentation by . . .
   - Developing the segmentation model.
   - Identifying physical bases – geographic, demographic, geodemographic.
   - Identifying behavioral bases – psychographics, benefits, product use.
10) Collect the data by . . .
    - Considering the applicability of secondary, primary and syndicated data.
    - Selecting the best method of data collection – telephone or personal interviews.
11) Employ appropriate sampling procedures. This generally means using probabilistic or random samples.
12) Analyze and interpret the data by following an analysis plan that . . .
    - Specifies coding and tabulation requirements.
    - Defines the statistical analysis – including multivariate procedures – that will be employed.
    - Uses complex models and advanced techniques only as needed.

Chapter
4

Translating Segmentation Findings into Strategy

Using Segmentation Results

The results of a market segmentation study can be informative, insightful, and even fun. Once the segmentation analysis is complete, however, the hard work begins. The real value of segmentation analysis lies in its ability to be translated into actionable strategies. The following example provides an illustration of how one company took the results of research, synthesized and integrated the research with its overall goals and business mission to develop one of the most successful niche airlines in the world.

Consumer mapping, focus groups and annual tracking studies helped Virgin Atlantic Airways attract passengers to the posh service from London to fourteen cities worldwide. Passengers have fun, and arrive relaxed and comfortable.

Virgin Atlantic Airways was an idea that grew from a 1965 magazine aimed at rebellious youths, a discount mail order record business, basement record stores, and a recording studio ... all begun by owner Richard Branson by the time he was 22. Virgin Atlantic began with one Boeing 747 leased for $4 million, on one daily London-Newark round trip. Virgin said it could make $25 million the first year, and expected a $3 million to $4 million profit. Virgin's low fares matched People Express' on that route. "Friendly competitors," People Express had already sold many of their seats for the summer when Virgin started, and there was still a big demand. Virgin wanted to offer good food, music and films at the lowest possible prices.

Considering Virgin's overall moves, no one decision making or segmentation process stands out, according to Michael Glavin and Taylor Tait at CMG Communications. They combined resources, in priority order:

- Annual tracking studies
- Focus groups
- Syndicated research
- Consumer mapping

The **annual image and advertising tracking** telephone survey of 1,680 respondents monitors airline awareness, airline advertising awareness, and perceptions of / attitudes toward Virgin Atlantic and its competitors in the U.S.-London travel market. The survey includes images describing travel behavior and demographics, as well as carriers (airlines). The study uses a sample from Plog Research's Travel-TRAK / USA database of 500,000 air travelers, rather than random digit-dialing.

Last year, Virgin was pleased that 82% of flyers knew that Virgin flies to London. But unaided awareness of Virgin was low (28%) and declining. Facing significant product improvements and massive ad campaigns ($160 million in the category) by British Airways, American Airlines and United Airlines, Virgin found that its initial low-fare positioning affected the present attitudes of frequent business-class travelers. In focus groups, they said that "people like them did not fly on Virgin." With profitability linked to Upper Class® service, the challenge was whether Virgin could break from its backpacker / low-fare heritage and be fully embraced by business travelers. Here is the Virgin Atlantic / CMG experience:

"TURNING BACKPACKS INTO BRIEFCASES"

GOALS: To elevate the stature of Virgin, CMG Communications set out to increase brand and advertising awareness, increase familiarity with the Upper Class® product, increase business travelers' approval or "Airline-for-Me" ratings, and turn these into trial and subsequent profit.

TARGET AUDIENCE: Three-quarters of Trans-Atlantic business travelers were men ages 35 to 54 with household incomes of $75,000+ who flew business or first class and were "married" to frequent flyer programs. Interestingly, they had low service expectations.

CREATIVE STRATEGY: *"Show them the product. Make them smile."* Enhance Virgin's image as an innovative leader among jaded international business travelers. To creatively link messages in all media, Virgin used the theme, "Instead of traveling *to* a culture, travel *in* a culture." Specific services such as drive-through check-in and in-flight massage were shown in high quality images to portray the "Virgin Culture." Focus groups showed that this changed the perceptions of travelers who knew about Virgin, but had rejected trial of the airline. Seeing is believing.

MEDIA STRATEGY: *"Go big. Or don't bother wasting the money."* With only a 5% "share of voice" (advertising in its competitive set), Virgin revised its $8 million budget. It sacrificed radio — a previous media cornerstone — in favor of cable and spot TV in 45-, 30- and 15-second increments, and ran cover gatefolds in the magazines used by "the big guys" (mega-carriers.) They also used newspaper, direct mail, point-of-purchase and travel industry events.

EVIDENCE OF RESULTS: The most important increases related to familiarity and a shift in the perception that Virgin is "appropriate for me" among those in target market segment. Those who were familiar with Virgin increased 70% (19 points) and those who rated Virgin highly increased 42% (16 points.) In 1997, Virgin had the highest load factor on the Atlantic and the most profitable year in its history.

Focus groups were used to explore attitudes found in the annual tracking survey and evaluate the impact of advertising. Heavily used in brand management, focus groups are helpful in concept development, testing and evaluation.

Syndicated research such as Simmons Market Research Bureau helps analyze product and media usage through magazine data. Other examples are *FIND / SVP* which monitors most publications and provides articles according to subject; and *Tab-It*, demographic profiles for product categories. To study competitors' activities and buy media, ad agencies typically refer to: *Arbitron*, local television and radio ratings; *Nielsen*, national and local ratings by demographic definitions; *Mediamark Research, Inc.*, product and media usage; *Scarborough*, demographic and product usage habits of media audiences; *Leading National Advertisers' Adspender*, all expenditures in ten major markets; *Broadcast Advertiser Reports*, competitive television activity; and *Publishers Information Bureau*, competitive print activity with geographic scope.

Consumer mapping is a geodemographic system that uses census data and consumer purchase records to classify cities into distinct clusters. By geographically charting the preferences for products and ideas, and seeing the courses of trends and even fads over time, one gets an idea of what consumers will buy tomorrow and can give consumers what they want even before they know they want it, according to Michael Weiss, author of *Latitudes & Attitudes* and *The Clustering of*

America. PRIZM™ (potential rating index by zip markets) from Claritas and ClusterPlus from Donnelley are examples of syndicated research relating to consumer mapping, combining lifestyle and demographic information using geographic (census tract or zip code) divisions. Virgin develops "Heat Sensitive Maps" with demographic, psychographic and purchase behavior information showing the propensity to travel to the U.K., and ranking zip codes in its U.S. gateway markets.

Created around a core philosophy of innovation, value for the money and the idea that flying should be fun, Virgin is way ahead of the concept of consumer orientation ... focusing not simply "on the passenger" but rather on *how passengers feel when they step off the plane — relaxed and comfortable.* Identifying with gracious British hospitality, Virgin Atlantic aims to offer the highest quality service in the world at competitive prices. Economy class is a superb value, but almost all the profits come from Virgin's posh Upper Class® service.

Today, Virgin's 20 long-haul aircraft fly nonstop, London to seven "gateway" U.S. cities — New York / Newark, Boston, Washington D.C., Orlando, Miami, Los Angeles and San Francisco — and South Africa, Greece, Japan and Hong Kong. In 1995 there were 8,000 departures with an overall load factor of 77% (percentage of available seats sold.) Weathering the industry's most troublesome years (and the demise of Pan Am, Braniff, British Caledonian and People Express) Virgin Atlantic has emerged as Britain's second largest long-haul passenger and freight carrier, with 5,000 employees helping more than two million passengers each year in business and leisure markets. Virgin Atlantic has received top awards from Travel Weekly, Executive Travel Magazine, Business Travel World, World Airline Entertainment Assn. and Business Traveller Magazine. It has been "Best Airline of the Year" six years in a row and received awards for Best Transatlantic Airline, Best Business Class, Best Advertising Campaign, Best In-flight Entertainment, Best In-flight Magazine (*Hot Air)*, Best In-flight Video and Best Check-in Ground Staff.

The remainder of this chapter explores strategies for incorporating the results from market segmentation research into your decision-making. Hypothetical and real-life examples illustrate the process. Worksheets are provided to aid your agency in your own strategic planning.

A Three-Step Process

A simple three-step process can be used for strategy formulation.

1) **Identify the project or decision**. Consider projects or decisions your agency is presently considering and determine whether segmentation analysis is appropriate for that project or decision. Some examples of projects for which segmentation analysis might be considered include: new services, special promotions, pass or other fare media programs, advertising, special events, passenger information services, direct mail campaigns, guaranteed ride home programs, etc. Once the project or decision is identified, the following sub-tasks should be completed.

    a) **Determine the applicability of segmentation analysis to this project**. Look first to see if segmentation data is available at your agency to see if segmentation analysis can be readily applied to this project or decision. If not, look to see if secondary data is available. If data is not available, determine the value of collecting this information compared with the overall cost of the project or the inherent risk in the decision. While segmentation analysis is appropriate to nearly any project or decision, consider also whether there is any value – given the potential costs and or time required to use segmentation analysis – to applying segmentation analysis to this effort.

    b) **Create a project team**. If segmentation analysis proves applicable to this situation, establish a team of researchers, analysts, marketers, service planners, and other management personnel as appropriate to collect, analyze, interpret, and use the data.

2) **Conduct a situation analysis**. If it is determined that segmentation analysis is applicable to this project, the project team should first conduct a situation analysis. This step involves taking a step back and examining why your agency is considering this project or undertaking this decision. It is both a fact-finding and decision-making process. This is not an easy task. As Hal W. Goetsch, former director of marketing for the American Marketing Association, points out, "Even when a conscientious effort is made to see the situation objectively, the focus can be blurred by tradition, unquestioned procedures, personalities, manipulated programs, corporate politics, indifference, or laziness. Too often the picture is faulty because facts are missing, guesses are not reliable, or important elements of the marketing environment have been ignored or overlooked." The situation analysis represents an opportunity for your agency to break out of the box and to look at the project or decision in different ways. Dare to be different! The following elements are part of a good situation analysis.

    a) **Identify opportunities**. Ask yourself and members of the project team about the potential benefits or gains to the agency if this project is undertaken.

    b) **Examine problems / threats**. Conversely, outline the potential problems or threats that may be encountered. Ask if the opportunities outweigh the problems. Or, can the problems / threats be overcome?

    c) **Establish goals**. Specify what the agency wants to achieve with this project. These goals should be the marketing results sought by management. This process is useful in providing direction – that is determining what you want to accomplish – motivating staff – identifying what you should be accomplishing – providing a timetable for implementation – noting if you are on schedule – and measuring performance – evaluating whether or not you are meeting your goals. Examples of goals are increased ridership, inquiries, awareness / recognition; attract new riders; reduce churn / turnover of existing riders, etc. These goals should be specific, measurable, and time-oriented. Furthermore, the goals should be realistic, objective, clear, and concise.

    d) **Evaluate current strategies**. If this is an existing project, time should be taken to examine current strategies in light of the opportunities, problems / threats, and goals explored above. Carefully outline and evaluate your current target market selections, the positioning strategy – key message – employed, and the marketing mix – product, promotion, price – that is being explored. If your existing strategy has had an evaluation or control function, carefully evaluate the data that is available from this process. If this function was not in place, other sources of data may need to be used.

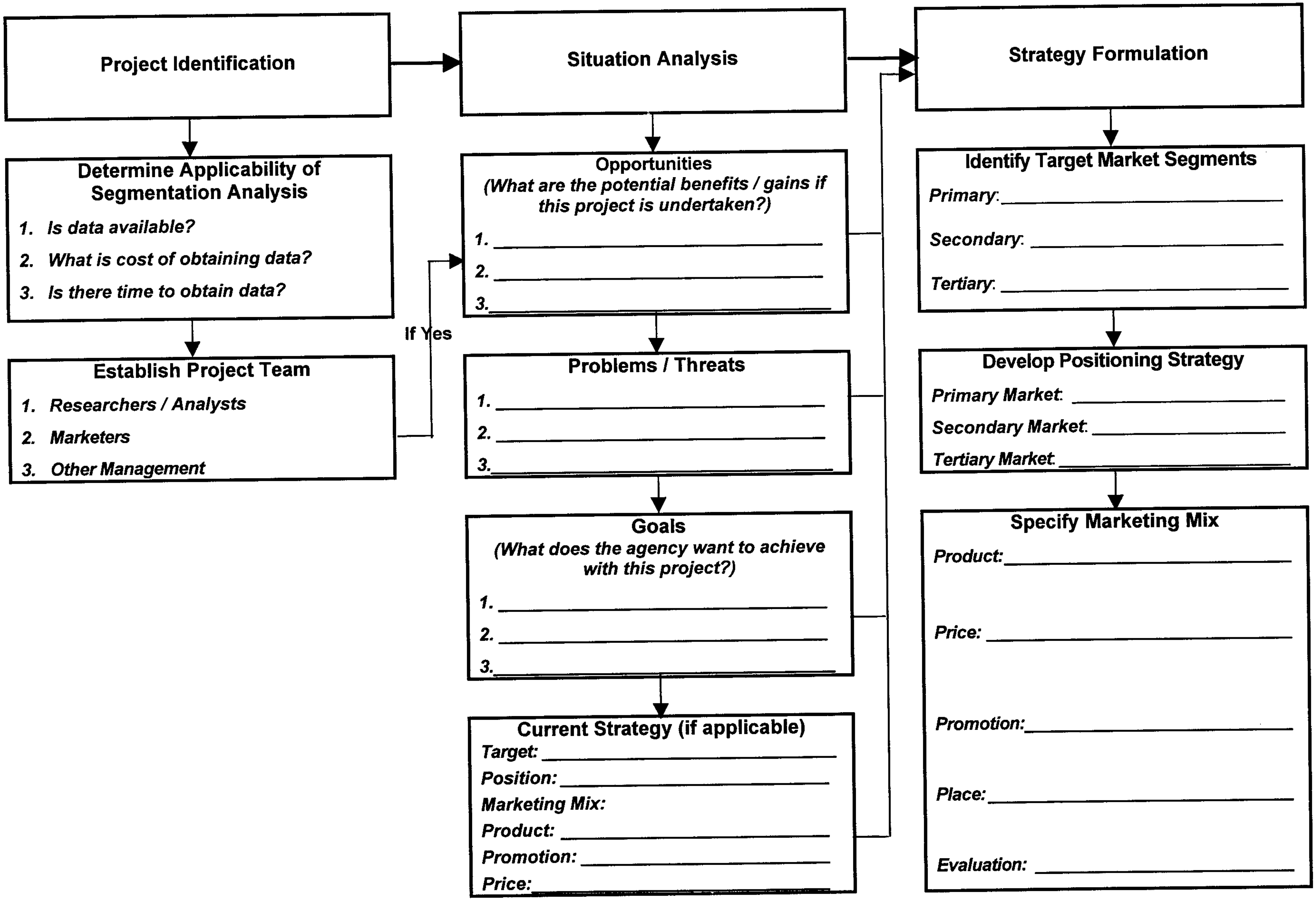
3) **Formulate strategies**. If the situation analysis indicates that this project is worth pursuing, the next step is to formulate the strategies to employ. If this is an existing project, this may involve a revision or complete overhaul of existing strategies. For new projects, you are operating from a clean slate. As noted in the situation analysis, be creative. Try looking at the results of your segmentation analysis in different ways. Brainstorm – don't reject ideas simply because your agency has never done it that way before. The bold new approach may be critical to attract those customer segments that have been resistant but through segmentation analysis have indicated they can be reached – with just a little more effort. The strategy formulation process entails the following three steps:

    a) **Identify target market segments**. The first major strategic decision is to select from the alternative market segments one or more groups you want to target for marketing activities. Each of the individual segments needs to be evaluated on its own merits and in conjunction with the capabilities and environmental situation surrounding the agency. Such an evaluation will pinpoint the different options that exist and the degrees of attractiveness these options have for the agency. Although several segments may be worth pursuing, the agency must balance multiple factors in making the final decision as to which segment(s) to ultimately pursue. This list might include the internal environment of the agency (financial and other resources), the external environment, an assessment of opportunities versus problems, and agency objectives. A measure of segment potential can then be determined. The question that should be asked now is, "How will this target audience contribute to the achievement of the marketing objective?" At this point, the agency should have a good idea which market segments should be targeted.

    b) **Position the segments**. The second step in strategy formulation is to formulate a unique marketing strategy to appeal to the target segment(s) you are trying to reach. The basic premise behind positioning is that the agency must have a specific advantage when serving this target segment. These advantages can be real or perceived. Positioning is the combination of sound marketing decision-making – based on research – and creativity. Careful consideration of the characteristics of each market segment will enable you to identify the position that is most likely to have the greatest relevance, as well as originality and impact.

    c) **Specify the marketing mix**. The overall marketing strategy employed – which includes the manipulation of the marketing mix (or 4-Ps) – is based on the target market(s) selected and the positioning strategy that will be employed. Product, promotion, price, and place (distribution) are the "architectural drawing" of strategy. For maximum effectiveness, they should be based on the segmentation analysis, as well as other strategic variables – company resources, management's values and policies, potential risk and return, etc. Strategies are the way in which market operations will be conducted before actual implementation. Strategies should be developed with full consideration of all other strategies. There must be consistency and compatibility among all strategic elements. Tactics – short-term strategies – are the "nuts and bolts" of the plan. Tactics consist of marketing initiatives such as advertising budgets, media schedules, route plans, etc. At this point in the process, the plan for your project is laid out. Will it work? To gauge the success of the project, the plan must be executed and then evaluated. Control and evaluation measures – to check whether specific objectives are being met, variances in performances have occurred, efforts are on schedule, and changes are prescribed – should be an integral part of this strategy formulation process.

The following figure illustrates this three-step process.


Project Identification
Situation Analysis
Strategy Formulation
Determine Applicability of Segmentation Analysis
1. Is data available?
2. What is cost of obtaining data?
3. Is there time to obtain data?
Establish Project Team
1. Researchers / Analysts
2. Marketers
3. Other Management
If Yes
Opportunities
(What are the potential benefits / gains if this project is undertaken?)
1. ______
2. ______
3. ______
Problems / Threats
1. ______
2. ______
3. ______
Goals
(What does the agency want to achieve with this project?)
1. ______
2. ______
3. ______
Current Strategy (if applicable)
Target: ______
Position: ______
Marketing Mix:
Product: ______
Promotion: ______
Price: ______
Identify Target Market Segments
Primary: ______
Secondary: ______
Tertiary: ______
Develop Positioning Strategy
Primary Market: ______
Secondary Market: ______
Tertiary Market: ______
Specify Marketing Mix
Product: ______
Price: ______
Promotion: ______
Place: ______
Evaluation: ______

More on Selecting Target Markets

Selecting the target markets can be an exciting and insightful process. As you undertake this process ask yourself the following questions:

1) **To whom will this project be targeted?** The primary target selected should include all those who might be responsive to the project and what is being offered. Typically, one market is likely to be most responsive.

2) **Are there important niche segments that might account for significant responses?** When you selected your primary target, you should have focused on one segment over other possible targets. However, if you have sufficient resources, you may wish to examine the idea of also addressing one or more other market segments. This may be one of the other broad segments you have defined or a specific niche within one of these larger segments. Each may or may not require separate strategies which will then require additional resources. When looking at these secondary targets consider the following:
    a) Can the secondary target represent an important source of ridership or other gain?
    b) Is this target segment reachable through targeted means?
    c) Would the positioning strategy employed for this audience be compatible with the main positioning strategy employed for the primary target?
    d) Would the funds needed to reach this target not be better spent elsewhere – against the main target?

    If you answered "yes" to all the first three questions and no to the last question, you should probably develop a strategy or strategies to address secondary consumer targets.

3) **What is this target like as a person?** Most important, what feelings, attitudes, and beliefs does this target hold about your proposed project? It is easier to develop strategies if one can visualize the audience. An insightful answer to this question will contribute decisively to the relevancy, originality, and impact of the final strategies. The description should include all known likes and dislikes, ambitions, concerns, attitudes, etc. And, most important from a strategic point of view, it should include the known ideas, attitudes, and beliefs that relate the individual to the proposed idea. If there are beliefs or attitudes that must be altered, these should be identified explicitly.

4) **What action do you want your target to take?** By specifying the action you want to cause, you can create a more focused strategy. This focus will lead to strategies with more relevance and more impact than vague references to desirable or remote goals such as "improve the image," "change attitudes," or "increase ridership."

5) **What action will that action replace?** In trying to persuade the target to take a particular action, what you are really asking them to do is to perform this act instead of doing something else. A complete statement of what the target is to do will always include explicit recognition of the source of that action – of what the prospect might have done instead.

Worksheet #1 should prove helpful in identifying your target market segment(s) – Steps 1 and 2. Complete one worksheet. The second worksheet will help you better understand your selected target markets – Steps 3 through 5. Complete one worksheet for each target market.

Worksheet # 1 – Identifying Target Markets

Step 1: Identify Market Segments
(List all applicable market segments from the market segmentation study.)

Market Segment A: ______________________________
(segment name)

Market Segment B: ______________________________
(segment name)

Market Segment C: ______________________________
(segment name)

Market Segment D: ______________________________
(segment name)

" ": ______________________________
(segment name)

Step 2: Select Primary Market Segment
(Select the key segment for this marketing activity.)

Primary Segment: ______________________________
(segment name)

Step 3: Identify / Evaluate Other Market Segments

Secondary Segment: ______________________________
(segment name)

	Yes	**No**
Can the secondary target represent an important source of ridership or other gain?	☐	☐
Is this target segment reachable through targeted means?	☐	☐
Would the positioning strategy employed for this audience be compatible with the main positioning strategy employed for the primary target?	☐	☐
Would the funds needed to reach this target not be better spent elsewhere – against the main target?	☐	☐

Worksheet # 2 – Understanding Your Target Market

Segment Name: ____________________

Step 1: What is this target like as a person?

Demographics: ____

Psychographics: ____

Lifestyle: ____

Attitudes: ____

Current Ridership: ____

Barriers to Ridership: ____

Other Characteristics: ____

Step 2: What action do we want our target to take?

Desired Action: ____

Step 3: What action will that action replace?

Current Action: ____

More on Positioning

Positioning is a key strategic concept in modern marketing theory and practice. It refers to the problem of differentiating one's own product or service from other competing entries in the marketplace.

At its most basic level, positioning is the development of the value proposition, the statement of how the agency proposes to deliver superior value to customers. Positioning is the communication about the product or service, not the product or service itself. This is evident in the classic definition of position by the authors who popularized the term, Al Ries and Jack Trout:

> Positioning starts with a product. A piece of merchandise, a service, a company, an institution, or even a person. Perhaps yourself.
>
> But positioning is not what you do to a product. Positioning is what you do to the mind of the prospect. That is, you position the product in the mind of the prospect.
>
> So it is incorrect to call the concept "product positioning." You're not really doing something to the product itself.[57]

Positioning is the strategic decision-making, the analytical, conceptual, and creative processes that lead to the positioning statement. The positioning statement – or value proposition – puts the concepts into words and performs two critically important functions:

- It becomes the selling proposition to your potential customers, the reason why they should use the service or act in a certain way rather than another.
- It communicates to the whole organization a sense of specific purpose or direction, coordinating their efforts toward the overarching common purpose of creating a satisfied customer.

The search for a positioning theme around which your strategy can coalesce requires four steps:

1) Identify alternative positioning themes.
2) Screen each meaningful alternative according to whether it is meaningful to customers, is feasible given your agency's competencies and customer perceptions of what the agency is capable of achieving, and is helpful in meeting long-term performance objectives.
3) Choose the position that best satisfies the criteria, and generates the most enthusiasm and commitment within the organization.
4) Write and communicate the positioning statement throughout the organization.

A well-written value proposition or positioning statement has three parts.

1) Who is the target customer?
2) Why should the customer act in the proposed way? The "Why?" part of the positioning statement is the familiar problem of defining the benefits for the customers and the reasons why acting in the proposed way will deliver those benefits.
3) What are we selling? The "What?" part of the value proposition is the most basic, most challenging, and most interesting part of the problem – specifying the service concept, exactly what is being offered. It must be defined from the point of view of the customer.

The following worksheet will help your agency work through this process.

---

[57] Al Ries and Jack Trout, Positioning: The Battle For the Mind. (New York: Warner Books, 1986) pg. 2.

Worksheet # 3 – Positioning

Step 1: Identify Positioning Themes

Theme #1: ____________________________________

	Yes	No
Is it meaningful to customers?	☐	☐
Is it feasible given your agency's competencies and customer perceptions of what the agency is capable of achieving?	☐	☐
Is it helpful in meeting long-term performance objectives?	☐	☐

Theme #2: ____________________________________

	Yes	No
Is it meaningful to customers?	☐	☐
Is it feasible given your agency's competencies and customer perceptions of what the agency is capable of achieving?	☐	☐
Is it helpful in meeting long-term performance objectives?	☐	☐

Theme #3: ____________________________________

	Yes	No
Is it meaningful to customers?	☐	☐
Is it feasible given your agency's competencies and customer perceptions of what the agency is capable of achieving?	☐	☐
Is it helpful in meeting long-term performance objectives?	☐	☐

Step 2: Select the Positioning

Theme #___: ____________________________________

Step 3: Write the Positioning Statement – Value Proposition

Who is the target?____________________________________

Why should they act?____________________________________

What are we selling?____________________________________

More on Strategy Formulation

Ideally, market segmentation findings can be readily translated into workable strategies. But, this is not always the case and the strategy formulation process is not easy. Although strategy formulation begins with data, strategy development also requires a good deal of experience, creativity and common sense.

Specific strategies and tactics must be adapted to particular market segments. Worksheet #3 provides a model for identifying important strategic issues and capitalizing on them. If you have gone through the three-step process described, this worksheet should be easy to complete using your existing information. The focus then becomes strategy development.

Formulating a marketing plan is the recommended next step. A formal, written marketing plan helps to remedy any potential lack of focus. The advantages for the agency in having a marketing plan include:

- It helps to produce desired results by giving your agency direction and organization.
- It is an excellent planning and control tool. Results can be easily compared to the forecast.
- It is a useful management tool. A wealth of information is available at your fingertips.

A marketing plan does not have to be a lengthy or complex document. The goal is to produce a consistent, information-based document with synergism created among all of its components. Such a project can be implemented, and then monitored for performance. The five required components of a good marketing plan include:

- **Step 1: Market / Situation Analysis**. Includes an overview of the results of any market research that is applicable, a competitive analysis, and an assessment of uncontrollable factors.
- **Step 2: Marketing Objectives**. These must be consistent with your agency mission and overall goals. Moreover, they must be specific.
- **Step 3: Strategy Formulation**. This involves identifying the target markets, selecting a positioning strategy, and specifying the marketing mix.
- **Step 4: Implementation.** Here, plans become actions. This should include assignments for coordination of all efforts.
- **Step 5: Evaluation.** During this ongoing process, one assesses performance relative to objectives and goals. Strategies and tactics are revised as necessary.

Worksheet # 4 – Strategy Formulation Worksheet

Segment Name: ____________________

Opportunities

1. ____
2. ____
3. ____

Problems / Threats

1. ____
2. ____
3. ____

Goals

Marketing	Financial
1. ____________________	1. ____________________
2. ____________________	2. ____________________
3. ____________________	3. ____________________

Positioning Strategy:

____

____

____

Marketing Mix Strategies:	Present Strategy	Recommended Strategies	Potential Impact
Product			
Promotion			
Price			
Place			

Marketing Mix Tactics:	Present Tactics	Recommended Tactics	Potential Impact
Product			
Promotion			
Price			
Place			

Evaluation / Control Measures:

1. ____
2. ____
3. ____

Examples

The following examples are meant to illustrate how the above process can be applied to specific situations. Examples were chosen that are similar to projects that many agencies have or have considered undertaking.

A Direct Mail Campaign Using Psychographic Segmentation

Agencies frequently use direct mail campaigns to introduce new routes and/or to announce route changes. Use the three-step process and the psychographic segmentation schema, the following direct mail campaign was developed.

Identify Project: "Direct Mail By Route"

Situation Analysis

Opportunities: What are the potential benefits / gains if this project is undertaken?

- Increase Awareness
- Attract new riders within walking distance
- Build and use a database (with home and destination locations, route numbers)
- Reward current riders

Problems / Threats: What potential barriers / problems may be encountered?

- Theft of home delivery with free-ride coupons
- Throw-aways
- Resent receiving mail (for privacy, green, or less-government reasons)
- Overwhelming service capacity by system-wide mailing
- Revenue "loss" from free-ride tickets
- Tickets presented for redemption forever after

Goals: What do we hope to achieve with this effort?

- Build ridership in Easygoing Alternatives and Upwardly Modals segments.
- Going beyond awareness, be more top-of-mind in Cautious Drivers' and other Avoider segment perceptions and merit their high approval scores
- Give great service through communications to everyone and to specific audiences.

Current Strategies: How have we approached projects like this in the past?

Target: Residents within walking distance of selected routes.

Position: Did you know where you might go on your neighborhood service?

Marketing Mix:

Product: Specific route and connections.

Promotion: Postcards to neighborhoods near routes orenvelope with a promotional piece with timetables, maps and free-ride tickets.

Price: Promotional free-rides typically for one ride. Same regular price.

Evaluation: Ridership counts
Total returned coupons
Evidence suggests limited success with these promotions

Strategy Formulation

Target Market(s)

Primary Market: Routes with high incidence of Upwardly Modals

Secondary Market: Routes with high incidence of Easygoing Alternatives

Tertiary Market: Routes with high incidence of Cautious Drivers

Position

Get up and go

Marketing Mix

Product: No change. Insure that routes are not selected that could be overwhelmed if ridership increases

Promotion: **Introductory newspaper ad** saying if you live near a route, look for your invitation to *get up and go.*

Postcards with mail-back opportunity (see example)

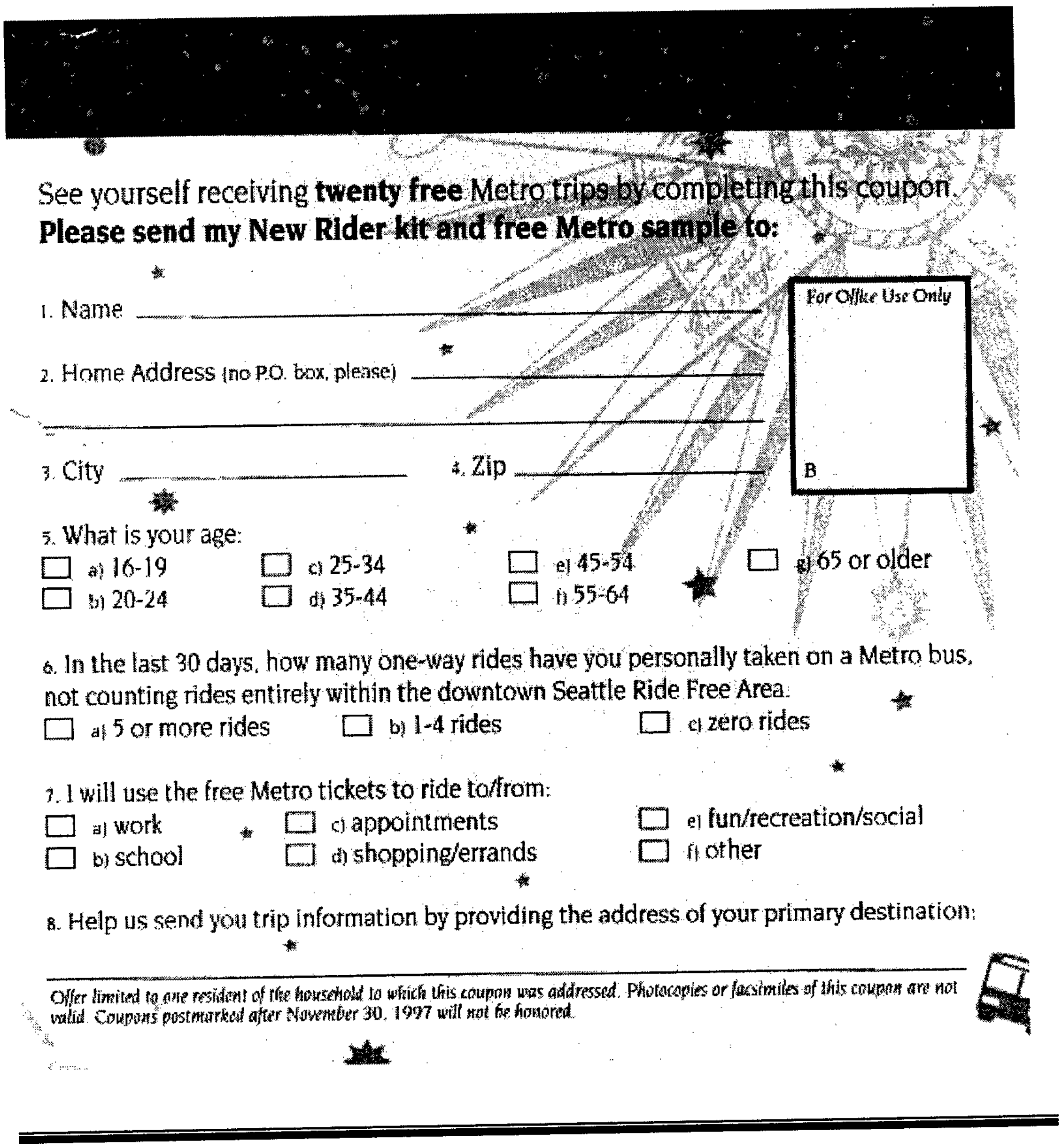
Create and add responses to database.

Use database for future mailings about (1) the route; (2) all alternative-mode services near home; (3) all alternative-mode services near destination; (4) system-wide service and price changes.

Include 10 free rides – significant enough offer to create value.

Price: Promotional free rides. Same regular price.

Evaluation: Ridership increases by route segment / date
Returned coupons by route segment / date
Recall / opinion / use survey cross-tabulated according to segmentation. Ask about attitudes and whether tried riding because of mailing / free-ride tickets.



See yourself receiving **twenty free** Metro trips by completing this coupon.
Please send my New Rider kit and free Metro sample to:

For Office Use Only

B

1. Name ______________________________

2. Home Address (no P.O. box, please) ______________________________

____

3. City ____________________ 4. Zip ____________________

5. What is your age:

☐ a) 16-19 ☐ b) 20-24 ☐ c) 25-34 ☐ d) 35-44 ☐ e) 45-54 ☐ f) 55-64 ☐ g) 65 or older

6. In the last 30 days, how many one-way rides have you personally taken on a Metro bus, not counting rides entirely within the downtown Seattle Ride Free Area.

☐ a) 5 or more rides ☐ b) 1-4 rides ☐ c) zero rides

7. I will use the free Metro tickets to ride to/from:

☐ a) work ☐ b) school ☐ c) appointments ☐ d) shopping/errands ☐ e) fun/recreation/social ☐ f) other

8. Help us send you trip information by providing the address of your primary destination:

____

Offer limited to one resident of the household to which this coupon was addressed. Photocopies or facsimiles of this coupon are not valid. Coupons postmarked after November 30, 1997 will not be honored.

Service to a Special Event Using Benefit Segmentation

Agencies frequently run special services during special events. All too often, little is done to take advantage of the ridership on these special services and institute methods to convert this special ridership to occasional or even regular ridership. Using the three-step process and the benefit segmentation schema, the following program was developed.

Identify Project: "Service to Local Special Event"

Situation Analysis

Opportunities: What are the potential benefits / gains from this project?

- Increase awareness
- Attract and retain new occasional or frequent riders
- Build relationships / familiarity with many who ride only for occasions
- Build and use a database (with home and destination locations)

Problems / Threats: What potential barriers / problems may be encountered?

- Cost of providing service
- Costs of training
- Costs of public information in a much larger area than the service district
- Revenue "loss" from future free-ride tickets

Goals: What do we hope to achieve with this effort?

- Increase awareness of service and quality / availability of service
- Increase ridership counts
- Attract new, permanent riders
- Build relationships with occasional riders as "supportive constituents"

Current Strategies: How have we approached projects like this in the past?

Target: Anyone attending festival

Position: Get from parking to festival easily

Marketing Mix:

Product: Special routes created for festival
Relatively frequent
Circulating between fixed park-and-ride lots and central location at festival

Promotion: Sometimes none
Limited newspaper or radio in conjunction with festival advertising

Price: Free or nominal ($0.25 to $0.50) charge

Evaluation: Ridership counts

Strategy Formulation

Target Market(s)

Primary Market: Service Skeptics

Secondary Market: Practically On-Boards

Position **"It's a sure, quick ride."**

Marketing Mix

Product: Two service offerings:
Regular service circulating between fixed park-and-ride lot and festival event. Service would circulate every 30 minutes to 1 hour.

Premium service circulating between fixed park-and-ride lots and festival event. Would serve people who have elected to park in set aside / reserved parking rows. Very frequent service – guaranteed wait of no more than 10 minutes between buses.

Price: Regular service – free or regular cash fare
Premium service – $1.00 per person or double cash fare.

Promotion: **Newspaper and radio advertising** announcing service.

Ambassadors at park-and-ride lots or festival event to assist riders with service, answer other questions about service, distribute promotional postcards for future riding.

Postcards with mail-back opportunity (see previous example). Also, includes one free ride coupon for future ride or one free gate ticket to the event.

Create and add responses to database.

Use database for follow-up mailings about (1) regional services; (2) all alternative-mode services near home; (3) all alternative-mode services near destination; (4) system-wide service and price changes.

Include in follow-up mailing 10 free rides – significant enough offer to create value.

Evaluation: Ridership at festival
Returned coupons by route segment / date
Recall / opinion / use survey cross-tabulated according to segmentation. Ask about attitudes and whether tried riding because of mailing / free-ride tickets.

Two Real Life Applications

Between the time the segmentation research was completed and the development of this handbook, two of the participating agencies have had the opportunity to make use of this data and to use the data in implementing a specific project. In both situations, the data was applied to the development of a marketing communications campaign. This is not to say that this type of research is only useful for these types of applications. Rather, this is simply a function of the amount of time – approximately four months – that was available between the time the segmentation research was completed and this handbook was developed. Application of this research is equally applicable to the development of new products or services, planning new routes, or developing new fare media. These latter types of projects, however, usually take longer to implement because of the amount of capital investment and other factors that are involved.

Development of a Ridership Campaign – Southeast Wisconsin

The Wisconsin Department of Transportation (WisDOT) joined with four transit systems – the Milwaukee County Transit System, the Racine Belle Urban Transit System, the City of Kenosha Transit System and the City of Waukesha Metro Transit System – to create a regional marketing program in Southeastern Wisconsin. As part of this initiative, considerable research was conducted. Moreover, Milwaukee County Transit System participated as one of the sites in this TCRP research effort. The following represents the use of this combined research in the development of a ridership campaign.

Target Market(s)

Primary Market: Upwardly Modals

Secondary Market: Easygoing Alternatives

Position

You Can Catch All Day Passes

Strategy

Product: No change.

Promotion: Radio and newspaper advertising.

::: RADIO COPY:::

SE Wisconsin Transit Partners
PARTNERSHIP – 701 :60
"Catching Passes TW"

April 21, 1997
REVISED 5/01/97

MUSIC: (TV Music)

ANNCE: I'm here on the bus with a couple of pretty darn good pass catchers – Antonio Freeman and Mark Chmura – talking about, what else, catching passes.

MARK: When you run good routes, you're wide open.
FREE: Then you catch passes all day.
MARK: Just like your bus company.
FREE: And this Wednesday and Thursday you can catch an all day pass.
MARK: Just a dollar fifty
FREE: There's the Z-option to work.
MARK: 2-Jet Scat Hang to school.
FREE: A Rover Blast to the Mall.
MARK: Then X Hitch Post home.
FREE: All day, all over – a dollar fifty.

ANNCE: So if you're in Milwaukee, Waukesha, Racine, or Kenosha, you can ride the bus all day

FREE: . . . this Wednesday and Thursday . . .

ANNCE: Wednesday, May 14 OR Thursday May 15 for how much?

MARK: Just a dollar fifty.

ANNCE: A buck fifty, unlimited rides?

MARK: All day long. All over.

ANNCE: For routes and schedules call . . .

MARK: Your bus company.

ANNCE: Get your All Day Pass when you hop on board. That's a super deal.

FREE: Your bus.

MARK: All day, all over – a dollar fifty.

FREE: Catch one.

::: RADIO COPY:::

SE Wisconsin Transit Partners
PARTNERSHIP – 702 :60
"Catch Today THUR"

April 21, 1997
REVISED 5/01/97

MUSIC: (TV Music)

ANNCE: I'm here on the bus with a couple of pretty darn good pass catchers – Antonio Freeman and Mark Chmura – talking about, what else, catching passes.

MARK: When you run good routes, you're wide open.
FREE: Then you catch passes all day.
MARK: Just like your bus company.
FREE: They run lots of routes . . .
MARK: all over town . . ..
FREE: in all kinds of traffic . . ..
MARK: right on time.
FREE: And this Thursday you can catch an all day pass.
MARK: Just a dollar fifty.
FREE: There's the Z-option to work.
MARK: 2-Jet Scat Hang to school.
FREE: A Rover Blast to the Mall.
MARK: Then X Hitch Post home.
FREE: All day, all over – a dollar fifty.

ANNCE: So if you're in Milwaukee, Waukesha, Racine, or Kenosha, you can ride the bus all day today for how much?

MARK Just a dollar fifty.

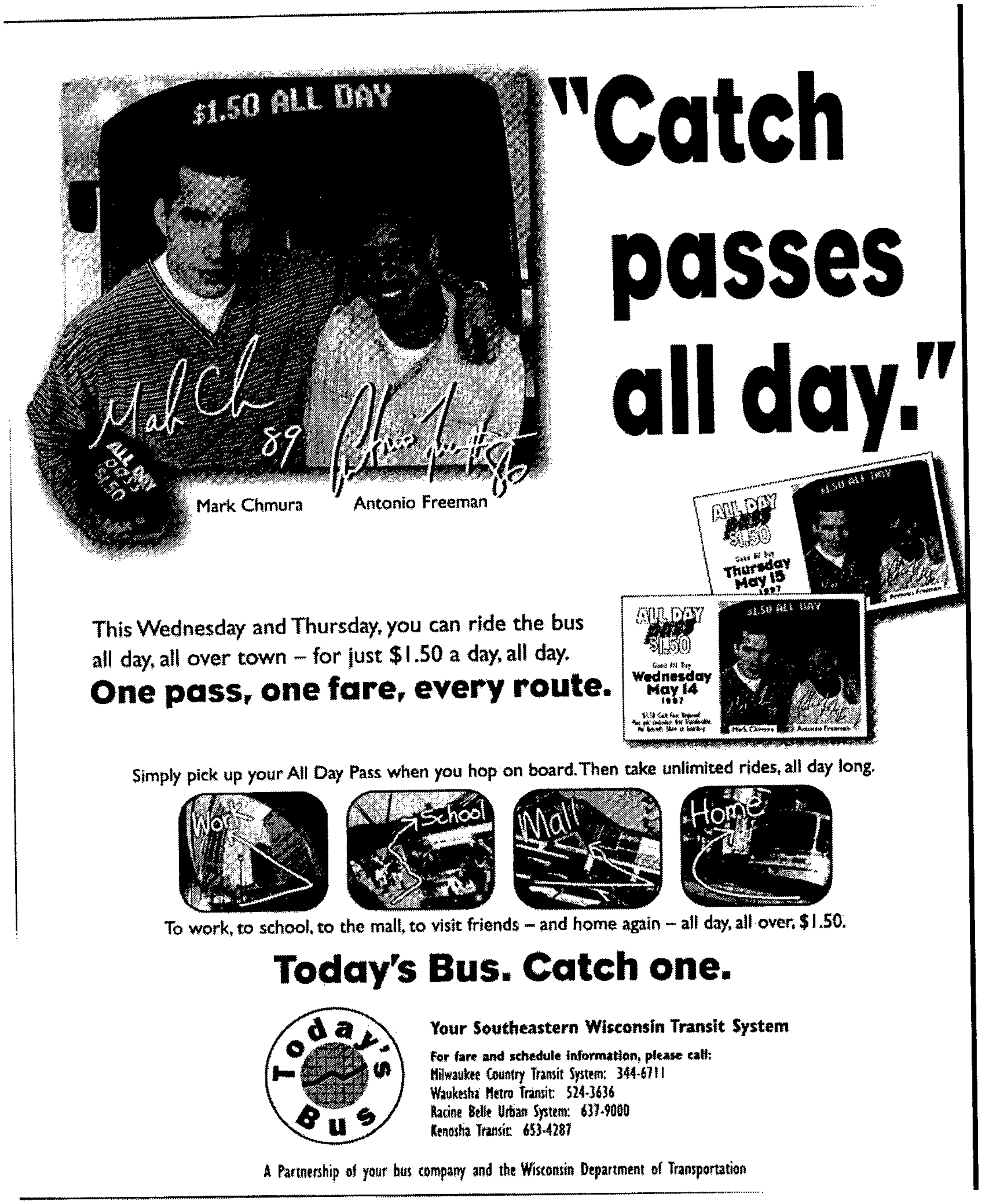
ANNCE: A buck fifty, unlimited rides?

MARK: All day long. All over.

ANNCE: For routes and schedules call your bus company and get your "All Day Pass" when you hop on board. That's a super deal.

FREE: Your bus.
MARK: All day, all over – a dollar fifty.

ANNCE: Catch one today.


$1.50 ALL DAY
ALL DAY PASS $1.50
Thursday May 15
Wednesday May 14
Work
School
Mall
Home

"Catch passes all day."

Mark Chmura Antonio Freeman

This Wednesday and Thursday, you can ride the bus all day, all over town – for just $1.50 a day, all day.

One pass, one fare, every route.

Simply pick up your All Day Pass when you hop on board. Then take unlimited rides, all day long.

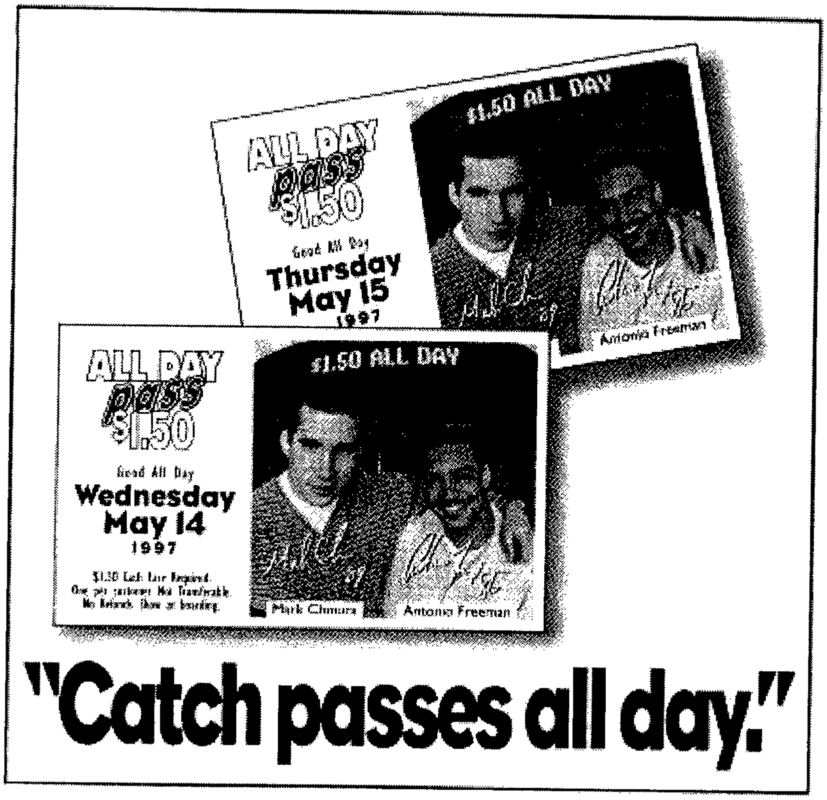
To work, to school, to the mall, to visit friends – and home again – all day, all over, $1.50.

Today's Bus. Catch one.

Your Southeastern Wisconsin Transit System

For fare and schedule information, please call:
Milwaukee Country Transit System: 344-6711
Waukesha Metro Transit: 524-3636
Racine Belle Urban System: 637-9000
Kenosha Transit: 653-4287

A Partnership of your bus company and the Wisconsin Department of Transportation


ALL DAY pass $1.50
Good All Day
Thursday
May 15
1997
$1.50 ALL DAY
Antonio Freeman
ALL DAY pass $1.50
Good All Day
Wednesday
May 14
1997
$1.50 Cash Fare Required.
One per customer. Not Transferable.
No Refunds. Show at boarding.
$1.50 ALL DAY
Mark Chmura
Antonio Freeman
"Catch passes all day."

Development of a Ridesharing Campaign – Boise, Idaho

The ADA County Highway Department obtained a grant to develop a marketing program to encourage the use of alternative modes. The program focuses on use of Commuterride and The Bus. Using the market segments identified in this TCRP Project, the following campaign was developed. Boise is truly a town on the fast track – developing and implementing this campaign in just under two and a half months. Our "kudos" to the ADA County Department of Highways and The Bus for developing and implementing such a creative and potentially award-winning campaign.

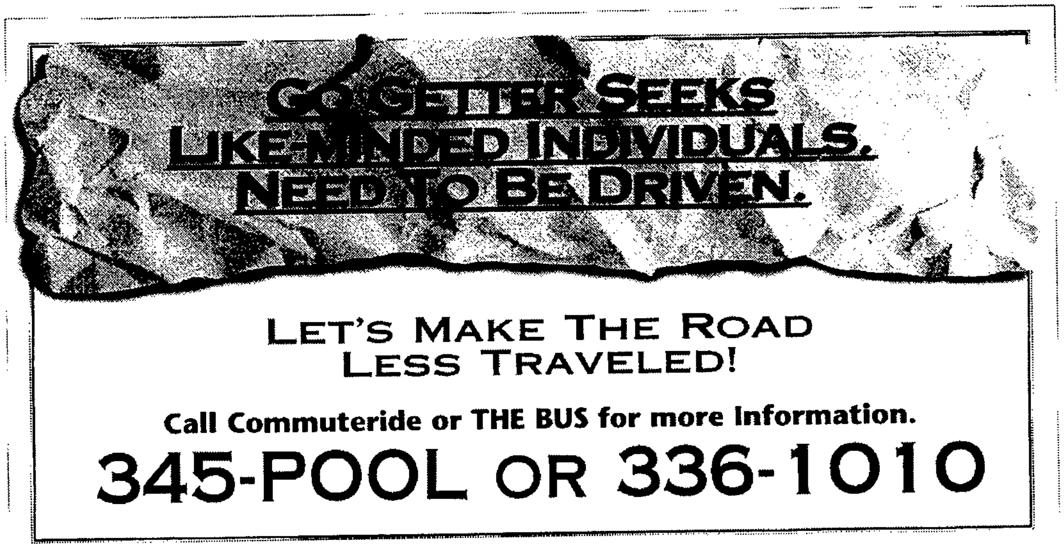
Identify Project: "Ridesharing Campaign – Boise Idaho"

Objective:	Increase ridership on The Bus by 3 percent Increase number of peak-hour commuters participating in carpools and vanpools by reducing the number of drive alone trips by 600 per day.
Primary Target:	Women 35 to 64 (Easygoing Alternatives)
Secondary Target:	Men 18 to 40 (Upwardly Modals)
Position:	To create a sense of community support among the public as well as businesses, a theme was developed that stresses the need to "come together" to provide solutions to traffic congestion. The tagline, "Let's Make the Road Less Traveled," is central to all design component transitions.
Message Strategy:	Based on the research conducted for The Bus as part of TCRP Project B-9, the focus of the message to the primary target is schedules are not always predictable and that's why the flexibility of car / vanpooling works. Ridesharing doesn't have to be done five days a week. Participants can reserve one or two days a week to drive alone and take care of personal errands. The message to the secondary target focuses on financial savings, reducing stress, and environmental advantages associated with sharing the ride.

SCRIPT

CLIENT: ACHD
A.E.: Christy Mower
SPOT TITLE: Matched Up
DATE: 10/3/97
JOB ORDER NO.: 22-0901
P.O. #:
DEADLINE:
SPOT LENGTH: 30
DUBS:
MASTER:
CASSETTE:

	Woman (about 35). Through the eyes of a video camera, as if it were a dating service.	I'm definitely looking for early morning risers. They should be interested in saving money, and heading in the same direction I am.
	Man (about 25) same setting	I'm looking for environmentally conscious types who like to travel in groups.
	Woman (about 50) same setting	I'm hoping to find companions to shop with, run errands, and share in daily excursions.
	Announcer VO Visual goes from 1st woman getting into vanpool to man getting off the BUS, to 2nd woman getting in a carpool.	Getting connected up is easier than you think. You don't have to make a video, just a phone call. Commuteride and THE BUS can help you save money and the environment by matching you up with a vanpool or carpool, or by providing you information about THE BUS. For more information call 336-1010 for THE BUS or 345-POOL for Commuteride for car or vanpooling. Let's make the road less traveled.



GO-GETTER SEEKS LIKE-MINDED INDIVIDUALS. NEED TO BE DRIVEN.

LET'S MAKE THE ROAD LESS TRAVELED!

Call Commuteride or THE BUS for more Information.

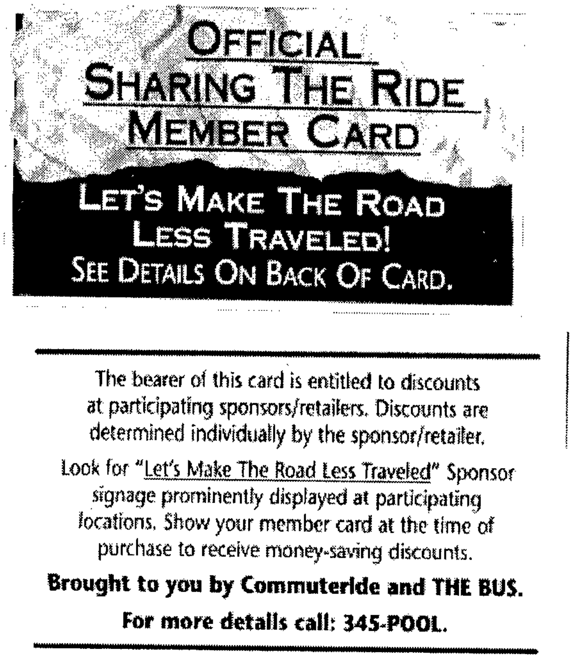
345-POOL OR 336-1010

Outdoor

Media Strategy: To create "top-of-mind awareness," two focused four-week flights concentrate the advertising efforts, maximizing the impact and awareness of the message. Radio and outdoor are the primary mediums, reaching both audiences throughout the day while they are driving and educating them about transportation alternatives. Television and newspaper complement the buy and reinforce the message. The combination of mediums achieves the maximum reach and sufficient frequency to build "top-of-mind awareness" among both audiences. The effectiveness of the campaign is enhanced by using public relations and promotional strategies.

Public Relations: A press conference was held to kick off the campaign. Attendees included Boise City government officials, transportation officials, Commuteride and The Bus employees, major employers, campaign sponsors and contributors, and media representatives.

Promotions: A Commuter Kit was distributed to all individuals interested in ridesharing or riding The Bus at a mall registration. Individuals received a Commuter Kit upon registering that contained promotional items and discount coupons. By registering, participants became Commuter Card members committed to using alternative transportation modes. Commuter cards allow members to receive discounts at various area merchants supporting the programs. All coupons and promotional items were donated by contributors.



Official
Sharing The Ride
Member Card

Let's Make The Road
Less Traveled!
See Details On Back Of Card.

The bearer of this card is entitled to discounts at participating sponsors/retailers. Discounts are determined individually by the sponsor/retailer.

Look for "Let's Make The Road Less Traveled" Sponsor signage prominently displayed at participating locations. Show your member card at the time of purchase to receive money-saving discounts.

Brought to you by Commuteride and THE BUS.

For more details call: 345-POOL.

Summary

The results of a market segmentation study can be informative, insightful, and even fun. The real value of segmentation analysis lies in its ability to be translated into actionable strategies. A three-stage process is suggested.

1) **Identify the project or decision**. Consider projects or decisions your agency is presently considering and determine whether segmentation analysis is appropriate for that project or decision. Some examples of projects for which segmentation analysis might be considered include: new services, special promotions, pass or other fare media programs, advertising, special events, passenger information services, direct mail campaigns, guaranteed ride home programs, etc. Once the project or decision is identified, then . . .

   a) Determine the applicability of segmentation analysis to this project.

   b) Create a project team.

2) **Conduct a situation analysis**. If it is determined that segmentation analysis is applicable to this project, the project team should first conduct a situation analysis. This step involves taking a step back and examining why your agency is considering this project or undertaking this decision. The situation analysis represents an opportunity for your agency to break out of the box and to look at the project or decision in different ways. Dare to be different! As part of your situation analysis, you should . . .

   a) Identify opportunities.

   b) Examine problems / threats.

   c) Establish goals.

   d) Evaluate current strategies.

3) **Formulate strategies**. If the situation analysis indicates that this project is worth pursuing, the next step is to formulate the strategies to employ. If this is an existing project, this may involve a revision or complete overhaul of existing strategies. For new projects, you are operating from a clean slate. As noted in the situation analysis, be creative. Try looking at the results of your segmentation analysis in different ways. Brainstorm – don't reject ideas simply because your agency has never done it that way before. The bold new approach may be critical to attract those customer segments that have been resistant but through segmentation analysis have indicated they can be reached – with just a little more effort. During this process you will . . .

   a) Identify target market segments.

   b) Position the segments.

   c) Specify the marketing mix.

Chapter

5

Enhancing the Value of Market Segmentation

Some Guidelines

Market segmentation can reward your agency with some or all of these riches.

- Increased ridership.
- Improved share of mode choice.
- New customers.
- Better customers.
- More satisfied customers.
- Potentially more 'profitable' marketing and service opportunities.

This process, however, takes considerable time and effort. To be successful, market segmentation requires well-conceived and executed research. Strategies must be formulated on the research and then monitored to determine their success.

Following are some final guidelines to assist and improve the value of your agency's market segmentation efforts. As with any good segmentation effort, we have targeted these guidelines to two audiences. However, we recommend that both audiences read and understand both sets of guidelines to better understand the often-distinct roles played by each. The first set of guidelines is for those who will be involved in actually performing segmentation analysis. These are helpful "how-to" pointers geared toward conducting segmentation studies. The second set is targeted toward those who are likely to use the segmentation results. They are more management-oriented and provide direction for segmentation's role in your agency's marketing and service planning processes.

Guidelines for Researchers

Following are five valuable tips that should form the basis of your market segmentation study. Follow these steps and you will be on your way to a well-conceived segmentation study.

1) **Plan, plan, plan. Then plan some more**. Successful segmentation projects are based on planning. The planning process is and should be more complex than that involved in many research studies. Use the many guidelines presented throughout this handbook to aid in your planning process.

2) **Consult important references**. Thorough research is the backbone of the segmentation project. Start with free and low-cost secondary sources of information before launching into your primary research. Familiarize yourself with all of the other research that your agency has done. Consult with other agencies to see what they have done in terms of market segmentation analysis. A good segmentation researcher routinely follows changes in the marketplace, trends in consumer behavior, changes in the industry, the

performance of the agency, and other related factors. The quest for market insight should be a continuous process – not just a process used when the need for specific information arises.

3) **Recognize the dynamics of the market**. No two people are identical. People do not stay the same. Neither is your agency at a standstill. If you have completed a segmentation study in the past, do not rest on your laurels. Once you have completed your first segmentation analysis, don't consider your work done. Market segmentation analysis should be considered as part of each marketing study where feasible. Keeping abreast with changes in the marketplace and the impact of these changes on your key market segments will allow the marketer and service planner to recognize and respond quickly to changing market conditions, to take advantage of unique opportunities, and to become a truly market and customer-driven organization.

4) **Use more than one basis for segmentation**. To provide the most realistic profile of the market, several bases for segmentation should be considered and used. For example, one might use a combination of psychographic and product usage bases for segmentation. In addition, more than one or two variables within a chosen basis for segmentation must be used. An analysis of all potentially useful variables should be planned prior to beginning the analysis. Developing a model of consumer behavior can be particularly helpful in identifying the potential bases for segmentation.

5) **Get down to basics**. The segmentation study should be designed to provide information needed for marketing and planning decision-making. It may not be necessary to employ a complex approach to market segmentation emphasizing theoretical methods and multivariate analysis. Practical segmentation should be the goal. This stresses a systematic planning framework that uses quantitative analysis effectively and efficiently, involves management in the study, and provides findings that are readily translatable into marketing strategy.

Guidelines for Managers

Segmentation represents one of the most valuable tools available for managers. Successful service plans and marketing strategies can be developed on this foundation. The following eight guidelines will assist you in managing and using market segmentation in your agency.

1) **Integrate market segmentation with other management activities**. Market segmentation is not an activity that should be undertaken in isolation or a project completed by a researcher and "presented" to management. Segmentation findings should be an integral part of your agency's service and marketing plans. For any decision your agency needs to make, consider whether market segmentation can be used effectively to make a better decision.

2) **Get involved in the project**. If you or your agency is conducting a segmentation study – no matter how large or small – get involved. Work closely with the researchers and other planners, analysts and/or consultants on the study. This involvement will insure information that is practical. Moreover, it precludes possible misunderstandings later. Frequent meetings and regular, two-way communication between management and those implementing the project can lead to higher quality studies.

3) **Be realistic in your expectations**. Set reasonable goals. Like any research, segmentation analysis is not a substitute for marketing or managerial deficiencies. Used properly, however, it can be a basis upon which your agency can become market- and customer-oriented. Don't expect immediate results. Some patience must be exercised in assessing the segmentation's value. As this handbook shows, segmentation research can often be used quickly to design more effective advertising. Changing products or services using segmentation analysis may take considerably more time. Moreover, it takes time for the results to be seen. The segmentation project may bridge several weeks or months – from the research and analysis to the strategy implementation phase. Finally, other marketing elements greatly influence behavior, making

the reconcilement of the study's findings and actual behavior more difficult. Hence, the need for coordination of all service planning and marketing efforts is critical.

4) **Listen to the results.** Research is a critical tool for the "learning" organization. It represents the opportunity to understand the market in which your transit agency is operating. Some of the information you get from research will be new. Other findings will build on existing knowledge providing greater insight into your customers and their needs. The use of market segmentation analysis will give your agency the edge necessary to survive and prosper in these increasingly difficult times.

5) **Dare to be different.** Segmentation studies generally provide fresh perspectives and new information. However, the translation of these findings into strategy is not always clear. Try looking at the findings in different ways. If one doesn't work, ask your researcher to slice the market in another way. Brainstorm – don't reject ideas simply because your agency has never done it that way before. Sometimes, this means risk – be willing to take it. If necessary, take a trial run or a small step first – try it with something that is low risk. The bold new approach may be critical to attract those customer segments that have been resistant but through segmentation analysis have indicated they can be reached – with just a little more effort.

6) **Request frequent updates.** The marketing environment is dynamic and constantly evolving. Do not think of a market segmentation study as a one-time project. Stay current with market conditions; keep abreast of changing trends. Incorporate market segmentation analysis into as many decisions and processes as possible.

7) **Get professional assistance when and where necessary.** Segmentation analysis is often complex and requires specialized expertise and training. Consult with experts when necessary – to assist in the research design, obtain data, analyze the results, interpret the findings, or develop strategy. Consultants can analyze situations objectively and are often more efficient for short-term projects than hiring additional staff.

8) **Treat segmentation as an investment.** Recognize that market segmentation is a beginning – not an ending point. The completed research study sets in motion a series of recommended activities contributing to a customer-centered plan. Better knowledge of your customers leads to better products and services that meet customer needs, wants, and expectations. This will ultimately lead to increased ridership and greater public support for public transportation and the use of alternative modes.

Market segmentation will continue to gain prominence in the next few years as more and more agencies – large and small – discover the power of this strategic marketing tool for attracting and keeping riders, and acknowledge its importance to the service planning and marketing functions. Donna Murray, Market Research Analyst, Dept. of Public Service, WMATA, states. . .

> Segmentation analysis is used for guidance for the advertising plan and concept development. The results are also used in service initiatives such as premium parking at Metrorail stations, new suburban bus services, and fare simplification, as well as our annual promotion for MetroPool / Metrochek employer-subsidized transit. We constantly strive to develop and refine materials to meet the needs of our audiences.

How about you?

Appendix

Demographic Variables

The following table provides standard breakdowns for demographic characteristics. These are adapted from those developed by the American Association of Advertising Agencies. The purpose of this guide is to provide researchers with a tool for collecting and analyzing media and marketing data with comparable reporting standards.

This appendix can be used as a handy checklist to be sure you are considering all demographic variables in your segmentation studies. Note that the recommended minimum and additional data standards apply to generalized surveys. Those surveys done for more specific purposes – e.g., particular geographic sections, affluent markets, etc. – may choose to collapse or expand characteristics as appropriate to their context. This appendix is meant to serve simply as a guide.

Characteristic	Minimum Data	Additional Data
1. Personal Characteristics		
A. Household relationship	Principle wage earner in household (defines household head) Spouse Child Other relative Partner / Roommate Other non-relative	
B. Age	18 – 24 25 – 34 35 – 44 45 – 54 55 – 64 65 and older	Dependent on respondent qualifications Breaks should be consistent with age definitions used by agency (e.g, if interviewing children, age breaks might capture breaks for Youth Passes).
C. Gender	Male Female	

Characteristic	Minimum Data	Additional Data
D. Education	Last Grade Attended Grade School or Less (Grades 1 – 8) Some High School Graduated High School Some College (at least 1 year) Graduated College .... If Currently Attending School: Full-time student Part-time student	Any post graduate work Post graduate degree If pertinent to study: Live home Live away Live in student housing Live off campus
E. Marital Status	Married .... Widowed Divorced / Separated Single (Never Married)	Spouse present Spouse absent
F. Race	Caucasian Black (African-American) Asian-American Hispanic Native American Other	
H. Principle Language Spoken at Home	English Spanish Other	Depends on nature of study. If high incidence of specific ESL group in population (e.g., Chinese, Polish), include as separate category
H.1 Other Languages Spoken At Home	English Spanish Other	See note above

Characteristic	Minimum Data	Additional Data
I. Occupation As Defined by Bureau of the Census	**Armed Forces**	
	Civilian Labor Force	
	Employed	Hold more than one job
	Full-Time (35 or More Hours / Week)	In home
	Part-time (Less Than 35 Hrs. / Week)	Out of home
	Self-Employed	Predominantly – Day Work
	Unemployed – Looking for Work	Evening / Night Work
	Major Occupational Categories	
	Managerial / Professional	
	Tehcnical	Technical
		Related Support Occupations
	Administrative Support (including clerical)	
	Sales (including retail)	
	Operative, non-farm laborers, service workers, private household workers	
	Farmers, farm managers, farm laborers	
	Craftsmen	
	Other	
	Industry of Employment	Private Company
		Government
	Job Title	
	Not Employed	
	Retired	
	Student (full-time)	
	Homemaker (not employed outside home)	
	Disabled	
	Temporarily disabled	
	Other	
J. Individual Employment Income	Under $10,000	
	$10,000 – $14,999	
	$15,000 – $19,999	
	$20,000 – $24,999	
	$25,000 – $29,999	
	$30,000 – $39,999	
	$40,000 – $49,999	
	$50,000 – $74,999	
	$75,000 and Over	$75,000 – $99,999
		$100,000 and Over
2. Household Characteristics		
A. County Size	A County	
	B County	
	C County	
	D County	

Characteristic	Minimum Data	Additional Data
B. Geographic Area (as defined by Bureau of Census)	Inside Metropolitan Statistical Area................ MSA Central City MSA Suburban MSA Other	Metropolitan Statistical Area Populations 4,000,000 and Over 1,000,000 – 3,999,999 500,000 – 999,999 250,000 – 499,999 100,000 – 249,999 50,000 – 99,999
	Outside Metropolitan Statistical Area Urban	Urban: Urbanized Area Central City Urban Fringe Other Urban Places of 10,000 – 50,000 population Places of 2,500 – 9,999 population
	Rural	
C. Geographic Region	As Defined by Bureau of Census................... Northeast North Central South West	Census Geographic Division New England Mid Atlantic East North Central West North Central South Atlantic East South Central West South Central Mountain Pacific Major Geographic Areas Census Tract Census Block TAZ (Transit Analysis Zone)
D. Household Size	1 Member 2 Members 3 Members 4 or More Members	Number of Adults (Persons 18 or Older) Male / Female HH Female Only HH Male Only HH
E. Household Type		Family Members Only Non Family Members Only Both Family and Non Family Members
F. Presence / Age of Children in Household	No Children Under 18 Youngest Child 6 – 17 Youngest Child Under 6	Youngest Child 12 – 17 Youngest Child 6 – 11 Youngest Child 2 – 5 Youngest Child Under 2
G. Number of Children Under 18 in Household	None One More Than One	Number of Children 6 – 17 Number of Children Under 6 Number of Children by Household Size
H. Household Income	See Individual Employment Income	See Individual Employment Income
I. Other Household Characteristics		Number of Adults Employed Full-time Spouse's Employment Status Spouse's Occupation

Characteristic	Minimum Data	Additional Data
J. Home Ownership	Own Home Private ownership Cooperative ownership Condominium Rent	Residence Five Years Prior to Survey Live in Same House / Home Lived in Different House / Home In Same County In Different County In Same State In Different State
K. Type Housing Unit	Single Family Home Multiple Family Home Apartment Mobile Home or Trailer	

Final Questionnaire

Following is the questionnaire that was used in this study. It is generally complete. However, in some cases, response categories, interviewer instructions, etc. are deleted for ease in reading. In all cases, responses were available for don't know responses or refusal to answer. These are shown only when don't know is a valid response – that is something used in analysis. Average length of this survey was 39 minutes.

Introduction

INTRO1 Hello, I'm ______________ from Northwest Research Group, a public opinion research firm. Today/tonight we are conducting a study for the Transportation Research Board that will be used to benefit transportation systems nationwide. This study is on consumer values and lifestyles, and public transportation. Your participation is very important to us.

INTRO2 For this survey I would like to speak with a member of this household who is 18 years of age or older. Would that be you?

1 YES
2 NO [ASK FOR ANOTHER IN HOUSEHOLD, BEGIN AGAIN OR ARRANGE A CALLBACK]
3 NO ONE IN HOUSEHOLD OVER 18 [SKIP TO THANK1]

Screening -- Definition of Qualified Respondent

Respondent qualifies as a Nonrider if Scr1.1 = 2 (has not ridden in the past year) or Scr1.2 > 8 (has ridden in the past year but less than once a month or in unusual circumstances).

Respondent qualifies as a Choice Rider if Scr 1.2 < 9 (has ridden at least 1 - 3 days a month in the past year), Scr3 = 1 (has valid driver's license), and Scr4 > 0 (has a car available for their use) or if Scr4 = 0 and Scr8 = 1 (has chosen not to purchase a car or to purchase an additional car for their household).

AREA1 First, what county do you live in? [READ LIST IF NEEDED]

AREA2 What is your home zip code?

SCR1.1 Have you personally used public transportation in the past year?

1 YES
2 NO **[QUALIFIED AS NONRIDER, SKIPTO SCR3]**
3 DON'T KNOW **[SKIP TO SCR 2.1]**
9 REFUSED **[SKIP TO THANK2]**

SCR1.2 **[IF SCR1.2 EQ 1]** How many days a week did you use public transportation in the past year?

[WAIT FOR RESPONSE, THEN PROBE AND VERIFY: Is that ____ days a week?]

__ ENTER NUMBER OF DAYS A WEEK **[RIDER]**
8 1 - 3 DAYS A MONTH **[RIDER]**
9 LESS THAN ONCE A MONTH **[NONRIDER, SKIPTO SCR3]**
10 ONLY RODE BECAUSE CAR WAS NOT AVAILABLE / BAD WEATHER **[NONRIDER, SKIPTO SCR3]**
11 ONLY RODE BECAUSE OF SPECIAL EVENT / OCCASION **[NONRIDER, SKIPTO SCR3]**

SCR2.1 Have you personally used public transportation in the past month?

1 YES **[SKIPTO SCR2.2]**
2 NO
9 DON'T KNOW / REFUSED **[SKIPTO THANK2]**

SCR2.1A Have you stopped riding the bus?

1 YES **[SKIPTO SCR3]**
2 NO
9 DON'T KNOW / REFUSED **[SKIPTO THANK2]**

SCR2.1B When you rode, did you ride only . . .

1 because your car was broken down or not available, **[SKIPTO SCR3]**
2 because of bad weather, **[SKIPTO SCR3]**
3 or because of a some other unusual circumstance? **[SKIPTO SCR3]**
4 NONE OF THE ABOVE **[SKIPTO SCR3]**
8 DON'T KNOW **[SKIPTO THANK2]**
9 REFUSED **[SKIPTO THANK2]**

SCR2.2 **[IF SCR2.1 EQ 1]** How many one-way trips have you personally taken on public transportation in the past month?

__ ENTER NUMBER
97 97 OR MORE
99 DON'T KNOW / REFUSED **[SKIP TO THANK2]**

SCR3 Do you have a valid driver's license?

1 YES
2 NO **[IF RIDER SKIPTO THANK3]**
9 DON'T KNOW / REFUSED **[IF RIDER SKIP TO THANK2]**

SCR4 How many automobiles in working condition do **you** personally have available for your use?

__ ENTER NUMBER **[IF GE 1 SKIP TO SCR9-1]**
8 8 OR MORE
9 DON'T KNOW / REFUSED **[SKIP TO THANK2]**

SCR5 **[IF SCR4 EQ 0 AND NONRIDER]** How do you usually get around?

1 RIDE WITH SOMEONE ELSE
2 BICYCLE
3 MOTORCYCLE
4 WALK
5 OTHER (SPECIFY)

SCR6 **[IF SCR4 EQ 0 AND RIDER]** Do you rely on public transportation for. . .

1 All of your local travel,
2 Most of your local travel,
3 Some of your local travel, Or
4 None of your local travel? **[RESCREEN]**
9 DON'T KNOW / REFUSED **[SKIP TO THANK2]**

SCR7 **[IF SCR6 EQ 2 OR 3]** How else do you usually get around?

1 RIDE WITH SOMEONE ELSE
2 BICYCLE
3 MOTORCYCLE
4 WALK
5 OTHER (SPECIFY)

SCR8 **[IF SCR6 < 4]** Do you use public transportation because you have **chosen** not to buy a car or to buy an additional car for the household?

1 YES
2 NO **[SKIPTO THANK3]**
9 DON'T KNOW / REFUSED **[SKIPTO THANK3]**

SCR9.1 Are you currently...

1 Employed full-time (30 or more hours a week),
2 Employed part-time (less than 30 hours),
3 Self-employed
4 Not employed outside the home [A HOMEMAKER],
5 A student,
6 Retired, Or
7 Unemployed?
8 OTHER (SPECIFY)

SCR9.2 **[IF SCR9.1 LE 3]** Do you commute to a fixed work site outside your home?

1 YES
2 NO

GENDER [RECORD RESPONDENT'S GENDER]

1 MALE
2 FEMALE

QALRESP [INFO SCREEN ONLY – DO NOT READ]

THIS IS A QUALIFIED RESPONDENT
THIS IS A: [CHOICE RIDER / NONRIDER]

SCR11 I'd like to tell you again how important your participation in this project is. Again, this information will be used to make improvements in transportation systems across the country. I am going to ask you a number of questions about your lifestyle and it is going to take a little while. Please be assured that all of this information will be kept confidential. Do you have time to continue now?

[PRESS ANY KEY TO CONTINUE OR PRESS CTRL-END TO SCHEDULE A CALL BACK]

Overall Values

A1 I'm going to read you a list of things that some people look for or want out of life. As I read the list, please rate each item on how important it is in your daily life. Use a 9-point scale where "1" equals "very unimportant" and "9" equals "very important." You may use any number in between.

A1.1 A sense of belonging
A1.2 Excitement
A1.3 Warm relationships with others
A1.4 Self-fulfillment
A1.5 Being well respected

A1.6	Fun and enjoyment of life
A1.7	Security
A1.8	Self-respect
A1.9	A sense of accomplishment

Values and Lifestyle Characteristics

INTRO1 Next I'm going to read you a list of statements about how you might think or feel in different situations. Please tell me the extent to which you agree or disagree with each statement using a 7-point scale where "1" means "strongly disagree" and "7" means "strongly agree." You may use any number in between.

Susceptibility to Interpersonal Influence

B1 I often identify with other people by purchasing the same products and brands they purchase.

B2 When buying products, I generally purchase those brands that I think others will approve of.

B3 I like to know what brands and products make good impressions on others.

B4 I frequently gather information from friends or family about a product before I buy.

B5 I achieve a sense of belonging by purchasing the same products and brands that others purchase.

Optimum Stimulation Level / Arousal Seeking Tendency

C1 I like to experience novelty and change in my daily routine.

C2 I like to go somewhere different every day.

C3 Designs or patterns should be bold and exciting.

C4 I sometimes like to do things that are a little frightening.

C5 I prefer friends who are reliable and predictable to those who are exciting and unpredictable.

Innovativeness

D1 I like to take chances.

D2 When it comes to taking chances, I would rather be safe than sorry.

D3 I like people who are a little shocking.

D4 I believe in leaving well enough alone.

Time Management

E1 I like to plan my activities by the clock.

E2 Because I schedule my activities by the clock, I am able to get more things done.

E3 I hate wasting time.

E4 I am always looking for ways to be more efficient so that I can get more things done.

INTRO2 The next list contains statements about the environment. Please tell me the extent to which you agree or disagree with each of the following. Use the same 7-point scale where "1" means "strongly disagree" and "7" means "strongly agree." You may use any number in between.

General Environmental Concern

F1 We use too much oil and gasoline in this country.

F2 We have to do something immediately to reduce the amount of gasoline we use.

F3 In the future, my children will have to live in an extremely polluted environment.

Socially Responsible Consumption Behavior

G1 It really makes me angry to think that the government does not do more to help control pollution of the environment.

G2 I think that a person should urge his or her friends not to use products that pollute or harm the environment.

G3 Our public schools should require all students to take a course dealing with environmental and conservation problems.

G4 Pollution is presently one of the most critical problems facing this nation.

G5 The whole pollution issue has never upset me too much since I feel it is somewhat overrated.

G6 I become angry when I think about the harm being done to plant and animal life by pollution.

G7 People are simply going to have to change the way they have always done things if there is to be any hope for the environment.

INTRO3 Now I'm going to read you statements describing other attitudes or opinions you might hold. Still using the 7-point scale where "1" means "strongly disagree" and "7" means "strongly agree" please tell me the extent to which you agree or disagree with these statements.

Automobile Involvement

H1 Cars offer me relaxation and fun when life's pressures build up.

H2 Sometimes I get too wrapped up in my car.

H3 Driving my car is one way I often use to relieve daily pressures.

H4 Driving my car is one of the most satisfying and enjoyable things I do.

Internal Locus of Control

I1 Getting people to do the right things depends on ability; luck has little or nothing to do with it.

I2 When I make plans, I am certain I can make them work.

I3 Becoming a success is a matter of hard work, luck has little or nothing to do with it.

I4 Getting what I want has little or nothing to do with luck.

Self Confidence / Leadership

J1 I think I have more self-confidence than most people.

J2 I am more independent than most people.

J3 I like to be considered a leader.

J4 I think I have a lot of personal ability.

J5 I often can talk others into doing something.

Fearfulness / Fear of Crime / Physical Comfort

K1 I worry a lot about myself or a family member becoming a victim of a crime.

K2 The world today is a very dangerous place.

K3 I am constantly concerned for my own safety.

Cleanliness

L1 The kind of dirt you can not see is worse than the kind of dirt you can see.

L2 You have to use disinfectants to get things really clean.

L3 I am uncomfortable when I am in places that are not totally clean.

L4 When I am someplace that does not smell right, I get the heebie jeebies.

Socialability

M1 I like to spend a lot of time alone.
M2 I make friends easily.
M3 I do not typically socialize with people at work or school or in my neighborhood.

Frugality

N1 I believe in being careful how I spend my money.
N2 I discipline myself to get the most for my money.
N3 I am willing to wait on purchases I want so that I can save money.
N4 There are things I resist buying today so I can save for tomorrow.

Personal Control and Responsibility

O1 I always schedule my time so that I arrive at my destination a few minutes early.
O2 It is very important to me not to have to rely on other people.
O3 It is always important for me to be on time.
O4 I always like to feel I am in control of my life.
O5 I do not like to have to rely on other people for help.

Physical and Occupational Mobility / Financial Optimism

Q1 In the last ten years, I have lived in at least three different cities.
Q2 I will probably move at least once in the next five years.
Q3 I expect to be a top executive in the next ten years.
Q4 I will probably have more money to spend next year than I have now.
Q5 Five years from now my total household income will probably be a lot higher than it is now.
Q6 I often worry about financial security.
Q7 I wish I had a lot more money.

Overload

R1 I need more hours in the day to do all the things that are expected of me.
R2 I can never seem to get caught up.
R3 I never seem to have any time for myself.
R4 Sometimes I feel as if there are not enough hours in the day.
R5 I seem to have to overextend myself to finish everything I have to do.

Use of / Consideration of Transit as Mode

S-INTRO Now I'm going to ask you some questions about transportation and your work and nonwork travel

S1 **[RIDER]** When you ride the bus or train, what is the **primary** purpose of your trip? **[RECORD ONE RESPONSE ONLY]**

S2 **[RIDER]** What other types of trips do you take on public transportation? **[ENTER ALL THAT APPLY]**

1 TO AND/OR FROM WORK
2 TO AND/OR FROM SCHOOL
3 TO AND/OR FROM BUSINESS APPOINTMENTS / ERRANDS
4 TO AND/OR FROM SHOPPING / ERRANDS
5 TO AND/OR FROM VOLUNTEERING
6 TO AND/OR FROM MEDICAL APPOINTMENTS
7 PERSONAL BUSINESS
8 TO AND/OR FROM SPORTING EVENTS
9 TO AND/OR FROM CULTURAL EVENTS
10 TO AND/OR FROM OTHER SPECIAL EVENTS [SPECIFY]
11 FUN / RECREATION/ SOCIAL/VISITING
12 OTHER [SPECIFY]

S3 **[NONRIDER]** Have you ever **considered** using public transportation instead of driving for your local travel?

1 YES
2 NO

S4 **[IF S3 EQ 1]** For what type of trips have you considered public transportation? **[ENTER ALL THAT APPLY IN ORDER GIVEN]**

SAME RESPONSE CATEGORIES AS S2

S5 **[NONRIDER]** Have you ever tried to get information on using public transportation in your area (for example, on routes or schedules)?

S6 **[NONRIDER]** In the past, have you ever ridden public transportation?

1 YES
2 NO

S7 [IF S6 EQ 1] When was the last time you used public transportation?

1 Within the past one to six months,
2 Six months to one year ago,
3 More than one year ago but less than five years ago, or
4 More than five years ago? [SKIPTO S12]
9 DON'T KNOW / REFUSED [SKIPTO S12]

S8 [IF S7 < 4] When you were using public transportation, how many days a week did you ride?

____ ENTER NUMBER OF DAYS A WEEK
8 1 - 3 DAYS A MONTH
9 LESS THAN ONCE A MONTH
10 ONLY RODE BECAUSE CAR WAS NOT AVAILABLE / BAD WEATHER
11 ONLY RODE BECAUSE OF SPECIAL EVENT / OCCASION

S9 [IF S8 < 9] For what type of trips did you use public transportation? **[ENTER ALL THAT APPLY IN ORDER GIVEN]**

SAME RESPONSE CATEGORIES AS S2

S10 [IF S8 < 9] When you were using public transportation, were you living at your current address?

1 YES
2 NO

S11 [IF S8 < 9 AND COMMUTER] When you were using public transportation, were you working at your current job location?

1 YES
2 NO

S12 [COMMUTERS] Is the idea of using public transportation instead of driving to **work/school** appealing or unappealing to you personally? Would that be very or somewhat?

S13 Is the idea of using public transportation instead of driving for your **personal travel** appealing or unappealing to you personally? Would that be very or somewhat?

S14 Thinking about different methods for getting around, how likely are you to use public transportation to make the following trips in the next year? Please answer on a 7-point scale where "1" means "not at all likely" and "7" means "very likely."

S14.1 Commuting to work or school
S14.2 Shopping
S14.3 Special events, such as sporting events or fairs
S14.4 Medical or other appointments
S14.5 Cultural events

S15.1/S15.3 Please assume that driving alone or using public transportation are the only options available. Both are equally accessible to you. If you had a total of 100 points to divide between the two options and the higher amount is given to the method you prefer, how many points would you give to [public transportation / driving alone]?

S16 If offered a choice between convenient public transportation and taking a car, would you. . .

1 Always drive a car,
2 Sometimes use public transportation, or
3 Always use public transportation?

Facilitating Factors

Familiarity With Services

T1 In general, are you familiar or unfamiliar with public transportation services in your area – that is, the types of services available, schedules, routes, etc.? Would that be very or somewhat?

T2 In general, are you informed or uninformed about public transportation services in your area – that is, the types of services available, schedules, routes, etc.? Would that be very or somewhat?

Access to Service

U1 To the best of your knowledge, how far is it from your home to the nearest bus stop? [PROBE: Please answer in either blocks or miles.]

U2 [MARKETS WITH TRAIN SERVICE ONLY] To the best of your knowledge, how far is it from your home to the nearest train station? [PROBE: Please answer in either blocks or miles.]

U3 To the best of your knowledge, how far is it from your home to the nearest park-and-ride lot? [PROBE: Please answer in either blocks or miles.]

Commuters Only. Noncommuters skip to V2.

U4 To the best of your knowledge, do you currently have bus or train service available from where you live to where you work / attend school?

1 YES
2 NO [SKIP TO U9]
3 DON'T KNOW [SKIP TO U9]
9 REFUSED [SKIP TO U9]

U5 To the best of your knowledge, how far is from where you work / attend school to the nearest bus stop? [PROBE: Please answer in either blocks or miles.]

U6 [MARKETS WITH TRAIN SERVICE ONLY] To the best of your knowledge, how far is from where you work / attend school to the nearest train station? [PROBE: Please answer in either blocks or miles.]

U7 [Would / Does] the route you [would need to take / take] to work or school require transferring?

1 YES
2 NO
3 DON'T KNOW

U8 [IF U7 EQ 1] How many transfers?

____ RECORD NUMBER
8 8 OR MORE

U9 Do you live in. . .

1 A central city or downtown area or
2 A suburb or suburban city
3 OTHER [SPECIFY]

U10 Do you work in. . .

1 A central city or downtown area or
2 A suburb or suburban city
3 OTHER [SPECIFY]

U11 How many miles do you travel from home to work/school one-way?
[PROBE: Using your best estimate.][IF LESS THAN 1, ENTER 1]

_____ MILES
97 97 OR MORE MILES
98 VARIES

U12 About how long [does] [would] your trip to work/school usually take from door to door from the time you leave your house until the time you get to work/school if you drive alone?

_____ MINUTES
97 97 OR MORE MINUTES
98 VARIES

U13 [IF U4 EQ 1] How long [does] [would] it take by bus?

____ ENTER MINUTES
97 97 OR MORE MINUTES
98 VARIES

U14 [IF U4 EQ 1] [MARKETS WITH TRAIN SERVICE ONLY] How long [does] [would] it take by train?

____ ENTER MINUTES

97 97 OR MORE MINUTES

98 VARIES

Congestion / Parking

V1 **[COMMUTERS]** How much is your commute trip affected by traffic? Would you say...

V2 How much is your daily nonwork travel affected by traffic? Would you say...

1 Affected a great deal,

2 Affected somewhat,

3 Not affected very much, or

4 Not affected at all?

V3 How often do you change your travel plans or not take trips because of the **cost** of parking at the destinations where you would like to go? Would you say...

V4 How often do you change your travel plans or not take trips because of the **availability** of parking at the destinations where you would like to go? Would you say...

1 Never,

2 Rarely,

3 Sometimes, or

4 Often?

Employer Support -- ***Work Commuters Only. Noncommuters skip to YINTRO.***

W1 Does your employer provide you with free or reduced fee parking?

1 YES, FREE

2 YES, REDUCED FEE

3 NO

4 NO, BUT HAVE FREE PARKING SOMEWHERE

5 DON'T KNOW

W2 [IF W1 EQ 2 OR 3, SKIP IF S1 = 1] How much does it cost you personally to park your car when you go to work? [PROBE: Is that daily or monthly?]

____ ENTER AMOUNT OF DOLLARS

W3 [IF W1 EQ 2 OR 3] How much would parking have to be before you would use public transportation to get to and from work? [PROBE: Is that daily or monthly?]

____ ENTER AMOUNT OF DOLLARS

W4 Does your employer...[INSERT STATEMENT]? [PROBE IF SELF EMPLOYED: Does your company. . .]

W4.1 Offer a program to pay for some or all of the transportation costs for employees who ride public transportation – for example pay for a bus pass

W4.2 Provide a car to use for work purposes during work hours

W4.3 Sell bus or rail passes

W4.4 Provide bus or rail information on routes and schedules

W4.5 Allow bus and train riders to use a company car during the day to run personal errands

W4.6 Assist in forming carpools and vanpools

W4.7 Provide bike racks, showers and lockers

1 YES

2 NO

3 DON'T KNOW

Job Characteristics

X1 What time do you typically arrive at work?

1 BEFORE 6:00 A.M.
2 BETWEEN 6:00 AND 7:00 A.M.
3 BETWEEN 7:01 AND 8:00 A.M.
4 BETWEEN 8:01 AND 9:00 A.M.
5 BETWEEN 9:01 AND 10:00 A.M.
6 AFTER 10:00 A.M.
7 VARIES

X2 What time do you typically leave work to travel home?

1 BEFORE 3:00 P.M.
2 BETWEEN 3:00 AND 4:00 P.M.
3 BETWEEN 4:01 AND 5:00 P.M.
4 BETWEEN 5:01 AND 6:00 P.M.
5 BETWEEN 6:01 AND 7:00 P.M.
6 AFTER 7:00 P.M.
7 VARIES

X3 How often does your job require you to. . . [INSERT STATEMENT]? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Always?

X3.1 Work regular hours (start and finish work at the same time each day)
X3.2 Use your own personal automobile for work-related travel during the day
X3.3 Work overtime hours

X4 Does your job allow you to. . . [INSERT STATEMENT]?

1 YES
2 NO,
3 DON'T KNOW
9 REFUSED

X4.1 Work flexible hours (that is, start and finish work at different times each day so long as you put in the required number of hours)

X4.2 Work an alternative work schedule (for example, a 4 day work week working 10 hours a day or 3 12-hour work days)

X4.3 Telecommute (that is, work at home that does not include work in the evenings or on weekends)

X5 How often do you. . . [INSERT STATEMENT]? Would you say...

1 Never,
2 Rarely,
3 Sometimes,
4 Often, or
5 Always?

X5.1 Leave work during the day to eat lunch or run errands to places farther than you can walk
X5.2 Drop off and/or pick up children at day care or school on your way to or from work

X5.3 Run errands on your way to or from work

X5.4 Begin work earlier or finish later than your regularly scheduled work hours

Involvement With the Mode Choice Decision

Y-INTRO Now I'm going to read you a series of questions about using public transportation.

Y1 Would you say the decision to use public transportation is an important decision or an unimportant decision? Would that be very or somewhat important / unimportant?

1 VERY UNIMPORTANT
2 SOMEWHAT UNIMPORTANT
3 NEITHER IMPORTANT NOR UNIMPORTANT
4 SOMEWHAT IMPORTANT
5 VERY IMPORTANT

Y2 Would you say the decision to use public transportation is a decision that requires. . .

1 Absolutely no thought at all
2 Very little thought
3 Some thought
4 A great deal of though

Y3 If you decide to use public transportation would you say there is . . .

1 Nothing to lose if you make the wrong decision
2 Little to lose if you make the wrong decision
3 Something to lose if you make the wrong decision
4 A lot to lose if you made the wrong decision

Y4 How sure are you about the ability of public transportation to perform satisfactorily? Would you say you are. . .

1 Not sure at all
2 Somewhat unsure
3 Neither sure nor unsure
4 Somewhat sure
5 Very sure
9 DK/REF

Benefits Sought

Z.1-INTRO Different people consider different things important when deciding whether to drive or to use transit for local travel. As I read the following list, please tell me how important each item is to you in the method of transportation that you use. Please answer on a 7-point scale where "1" means "not at all important" and "7" means "extremely important." You may use any number in between.

Z2-INTRO Now based on your personal experience or anything you have seen, read, or heard, please tell me how well you think these same statements describe using public transportation. Please answer using a 7-point scale where 1 means the statement "does not describe public transportation at all" and 7 means the statement "describes public transportation very well." You may use any number in between.

Z1.1 I can count on it to get me to where I am going on time.

Z1.2 I can control my own schedule.

Z1.3 It is easy to arrange.

Z1.4 I am able to get home in an emergency.

Z1.5 I am able to come and go when I want to.

Z1.6 It offers me the flexibility I need for my schedule.
Z1.7 It gives me an opportunity to be alone to think.
Z1.8 It is appropriate for a person in my position.
Z1.9 It is consistent with the kind of person I am.
Z1.10 It gets me to and from where I want to go without feeling stressed.
Z1.11 It gets me in the right frame of mind for the rest of the day.
Z1.12 It enables me to arrive at my destination feeling clean and fresh, not dirty or grimy.
Z1.13 I can get other things done while traveling; it's not just dead time.
Z1.14 It gets me where I am going the quickest way possible.
Z1.15 It is conveniently located to my trip origin and destination.
Z1.16 I do not have to change from one mode to another to get to where I am going.
Z1.17 It does not cost much.
Z1.18 I do not have to worry about wear and tear on my vehicle.
Z1.19 I am assured of my personal safety from crime.
Z1.20 I am assured that I will not be bothered by other people.
Z1.21 It minimizes my risk of getting in a traffic accident.
Z1.22 It is comfortable.
Z1.23 I have a place to sit.
Z1.24 It is clean.
Z1.25 I do not have to worry about who is going to sit next to me.
Z1.26 I do not have to worry about bad weather.
Z1.27 I do not have to worry about carrying packages or parcels.
Z1.28 It is good for the environment.
Z1.29 It does not contribute to traffic congestion.

DEMOGRAPHICS

DEMO1 Finally I have a few demographic questions that will be used to help us analyze the results of the study.

DEMO2 What is your age?

____ ENTER ACTUAL NUMBER

DEMO2A [If refused] Are you between. . .

1 18 and 24,
2 25 and 34,
3 35 and 44,
4 45 and 54,
5 55 and 64, or
6 65 and older?

DEMO3 What is the highest level of formal education you have had the opportunity to complete? [READ IF NECESSARY, **PROBE FOR NEXT HIGHEST LEVEL]**

1 Grades 1 - 8
2 Grade 9
3 Grade 10
4 Grade 11
5 Graduated High School
6 Technical or Vocational School
7 First Year of College
8 Second Year of College
9 Three or More Years of College / Haven't Graduated
10 Graduated College (4 yrs.).
11 Attended Graduate School
12 Completed Graduate School

DEMO4 Are you. . .

1 Married,
2 Single, Never Married,
3 Divorced or Separated, or
4 Widowed?
5 OTHER [SPECIFY]

DEMO5 **[IF DEMO4 EQ 1]** Is your spouse. . .

1 Employed full-time (30 or more hours a week)
2 Employed part-time (less than 30 hours)
3 Self-employed
4 Retired
5 Not employed outside the home / A Homemaker
6 A student
7 Current unemployed
8 OTHER [SPECIFY]

DEMO6 What is your occupation?

1 PROFESSIONAL / TECHNICAL (E.G., ACCOUNTANT, ARTIST, COMPUTER SPECIALIST, DENTIST, ENGINEER, LAWYER, LIBRARIAN, NURSE, PHYSICIAN, SCIENTIST, TEACHER, TECHNICIAN, WRITER, ETC.)
2 MANAGER OR ADMINISTRATOR
3 SALES (INCLUDES RETAIL) (E.G., INSURANCE SALESMAN, REALTOR, SALES CLERK, STOCKBROKER)
4 CLERICAL (E.G., BANK TELLER, BOOKKEEPER, CASHIER, OFFICE CLERK, POSTMAN, SECRETARY, TEACHER'S AIDE, TELEPHONE OPERATOR, ETC.)
5 SKILLED WORKER / CRAFTSPERSON (E.G., BAKER, CARPENTER, ELECTRICIAN, FOREMAN, JEWELER, MECHANIC, PAINTER, PLUMBER, TAILOR, ETC.)
6 MACHINE OPERATOR (E.G., BUS DRIVER, CONDUCTOR, FACTORY WORKER, TRUCK DRIVER, OPERATOR OF OTHER KINDS OF MACHINES)
7 LABORER / SEMI-SKILLED WORKER (EXCEPT ON FARM) (E.G., CARPENTER'S HELPER, FISHERMAN, GARBAGE COLLECTOR, STOCK HANDLER, TEAMSTER, WAREHOUSEMAN, ETC.)
8 FARMER OR FARM MANGER
9 FARM FOREMAN OR FARM LABORER
10 SERVICE WORKER (EXCEPT IN A PRIVATE HOUSEHOLD, E.G., BARBER, BARTENDER, COOK, DENTAL ASSISTANT, DISHWASHER, FIREFIGHTER, JANITOR, NURSING AIDE, POLICE OFFICER, USHER, WAITER, ETC.
11 PRIVATE HOUSEHOLD WORKER
12 GOVERNMENT OR MILITARY WORK
13 OTHER [SPECIFY]

DEMO8 Including yourself, how many people live in your household?

____ ENTER ACTUAL NUMBER

DEMO9 [IF DEMO8 > 1] How many children under the age of 18 live in your household?

__ ENTER NUMBER

DEMO10 **[IF DEMO9 > 0]** What are their ages?

10.1 _____ ENTER AGE OF FIRST CHILD
10.2 _____ ENTER AGE OF SECOND CHILD
10.3 _____ ENTER AGE OF THIRD CHILD
10.4 _____ ENTER AGE OF FOURTH CHILD
10.5 _____ ENTER AGE OF FIFTH CHILD

DEMO11 [IF DEMO8 > 1] Do you have older adults or senior citizens living in your home to whom you are the primary care giver?

1 YES
2 NO

DEMO12 Are you. . .

1 White / Caucasian,
2 African-American,
3 Asian / Pacific-Islander,
4 Native-American, or
5 Hispanic?
6 OTHER [SPECIFY]

DEMO13.1 Is your total annual household income from all sources. . .

1 $30,000 or above
2 Below $30,000
99 DON'T KNOW / REFUSED

DEMO13.2 [IF DEMO13.1 EQ 2] Would that be. . .

1 Under $5,000
2 Between $5,000 - $7,499
3 Between $7,500 - $9,999
4 Between $10,000 - $14,999
5 Between $15,000 - $19,999
6 Between $20,000 - $24,999
7 Between $25,000 - $29,999

DEMO13.3 [IF DEMO13.1 EQ 1] Would that be. . .

1 Between $30,000 - $39,999
2 Between $40,000 - $49,999
3 Between $50,000 - $74,999
4 Between $75,000 - $99,999
5 $100,000 or Over?

DEMO14 If you were asked to use one of the following terms to describe your social class, which would you choose?

1 Lower class
2 Lower-middle class
3 Middle class
4 Upper middle class
5 Upper class

DEMO15 We would like to be able to identify the census tract in which you live. Could you please provide us with the names of the cross streets or intersections nearest your home?
[PROBE: Please provide me with the whole street name, directional indicators, etc. so I can locate the general area on a map.]
[PROBE ONLY IF NECESSARY: We will be using this information to do detailed analysis by census tract.]

____

THANK That concludes our survey. Thank you very much for the time you spent with us today. Your responses were very helpful.

DEMO19 SIZE OF RESIDENCE AREA (FROM ZIP CODE)

1 LARGE CENTRAL CITY (250,000 OR MORE)
2 MEDIUM CENTRAL CITY (50,000 - 250,000)
3 SUBURB OF LARGE CENTRAL CITY
4 SUBURB OF MEDIUM CENTRAL CITY
5 NOT WITHIN AN SMSA

Multivariate Statistical Techniques

The following synopsis provides a non-technical overview of analytical methods frequently employed in segmentation studies. The objective of this appendix it not to explain how to use multivariate analysis, but rather to acquaint the marketing planner with potential applications for these procedures. The interested reader is advised to consult advance marketing research or statistics texts for further information on multivariate statistical techniques. If you elect to use one or more of these methods in a study, it is suggested that you employ the services of an individual experienced in using the particular method you are seeking to employ. Not all market research firms and/or consultants have expertise using any or all of these techniques.

- **Factor Analysis**. Factor analysis a method that examines a series of variables and reduces them to a smaller number of key factors that better explain a given marketing situation. The basic aim of factor analysis is to take many variables, and reduce these to a smaller number of "factors." Each factor can be thought of as the basic idea or theme expressed by a group of variables that are highly correlated with that factor. Factor analysis is useful in psychographic and benefit segmentation research. It is used most often to reduce life style, psychological, or benefit variables to broader and more stable dimensions that can then be subjected to clustering procedures.

- **Cluster Analysis**. Cluster analysis includes many techniques aimed at separating (classifying) respondents or objects into groups (clusters). Groups are formed so that any member of a group has more similarities to other members of that group than to members of other groups. These similarities are typically based on psychographic or benefit bases.

- **Classification Tree Methods: (AID, CHAID, or CART).** Classification tree methods greatly expand the ways in which you can analyze, view, and consider survey data and other information.

- **Conjoint Analysis**. Also called "trade-off" analysis, this analytical method measures the impact of varying product attribute mixes on the purchase decision. This statistical approach ranks consumer perceptions and preferences toward products offering different levels of a variety of attributes. Utilities for each level of each attribute are then computed. These utilities can then be evaluated and grouped for segment homogeneity. This technique is particularly useful as part of a benefit segmentation study.

- **Discriminant Analysis**. Discriminant analysis can be highly helpful in interpreting cluster output. This procedure uses the clusters as a "grouping" variable. It then seeks to find which combinations of basis or other variables most differentiate between the clusters. Discriminant analysis can also show how well each cluster has been identified, given detailed information on how much clusters look alike, and even provide each respondent's likelihood of belonging to each cluster group. A discriminant function can be identified that can be used to classify respondents in future studies into the segments identified in a baseline segmentation study.

Major Sources of Demographic / Marketing Information

The following list of key references is helpful for gathering information needed for segmentation studies. The lists are arranged alphabetically under categories. Generally, these sources are readily available for review at your local public or academic library. Recommend that your company purchase publications that marketing staffs consult frequently. Also, this list is by no means complete, because research sources can vary considerably by industry and market. It does however represent a good starting point – a general reference directory for marketers. The Appendix is organized into three parts: consumer demographics, business demographics, and secondary sources.

I. CONSUMER DEMOGRAPHICS

American Demographics. This monthly magazine is a source for demographic information relevant to consumer change and marketing insights. This journal gives you the essential facts, figures, forecasts, analysis for identifying and segmenting marketing. It features articles on age, education, geography, income, lifestyles, subcultures, trends, spending, and timely consumer topics.

CACI's Sourcebooks. CACI Marketing Systems publishes reference books of selected census data, updates, and forecasts for every zip code and county in the United States (Sourcebook of ZIP Code Demographics and Sourcebook of County Demographics). These desktop guides are easy to use and provide logical and streamlined profiles of 1990 census demographics; they are also available on CD-ROM. The ZIP Code Mapbook of Metropolitan Areas displays 320 maps in an 11" x 17" format.

Census of Population and Housing 1990. This resource offers detailed data on the U.S. population for predefined geographical areas. Census content includes basic population and housing items, **as** well **as** social and economic characteristics. Many specialized reports are available. Census products are disseminated in several forms: printed reports, computer tapes, microfiche, online information systems (CENDATA), CD-ROM, and floppy diskettes. The TIGER mapping system provides a handy complement to 1990 Census products.

County and City Data Book. This source is an all-purpose database for all U.S. counties and large cities (population over 25,000). Statistics on population, housing, race, education, marital status, income, employment, occupation, crime, and economic sectors are provided. Available on CD-ROM.

Editor and Publisher Market Guide. This annual reference combines 1990 census data with updated surveys for U.S. and Canadian markets. Local population, household, income, retail sales, newspaper circulation, and related data (and estimates) are featured.

Rand McNally Commercial Atlas and Marketing Guide. Besides being one of the largest books in print, this annual atlas includes traditional area maps, and data on population, economics, communications, and transportation. Canadian statistics are also included.

Sales and Marketing Management's Special Publications. This monthly magazine aimed at sales and marketing professionals offers reference guides such as *The Survey of Buying Power, Survey of Media Markets,* and *The Sales Manager's Budget Planners.* These publications feature population estimates, household data, age distributions, and retail sales information. *S&MM's* special issues are particularly helpful for evaluating existing or new markets, analyzing sales territories, measuring market potential, and related marketing decisions.

State and Metropolitan Area Data Book. This government publication reports - via tables, charts, and maps- data on U.S. MSAs. The largest part of the reference is arranged by city, and in that section each city is usually divided by suburbs, central city, and MSA. Includes business and government statistics as well as demographics.

Statistical Abstracts. The *U.S. Statistical Abstract* is a logical starting place for many market researchers. This annual reference summarizes and indexes consumer data from the important U.S. government publications. Most states have their own statistical abstracts filled with similar demographic information.

Statistical Handbooks. A series of four targeted publications on *Aging Americans, the American Family, U.S. Hispanics, and Women in America.* In addition to a unique demographic focus for each, these books also address political, social, cultural. and economic issues.

The Numbers News, a monthly newsletter by *American Demographics.* provides market trends and current data releases from government agencies, consumer surveys, and other marketing resources.

Other Good Sources of Consumer Demographics. Business reference librarians were impressed with two new publications from Standard Rates and Data Services (SRDS), the *Lifestyle Market Analyst* and the *Lifestyle Zip Code Analyst.* Claritas' *National Encyclopedia of Residential Zip Code Demography (REZIDE),* Donnelley's *Market Profile Analysis,* Woods and Poole's *State Profiles,* and the *Zip Code Sale Information Guide* are also worth consulting.

II. BUSINESS DEMOGRAPHICS

Business Census Reports. These publications consist of the following series of individualized Census reports: *Retail Trade, Wholesale Trade, Services, Construction, Manufacturing, Mineral Industries, and Transportation.* These national or state economic reports provide statistics on different kinds of establishments, sales and employment size, and payroll by designated geographic areas and SIC codes. The business censuses are taken every fifth year in years ending in a two or seven (such as 1992 or 1997). In addition to the basic data collected, a number of special subject reports are included detailing specific industries or market related facts. Now available on CD-ROM.

County Business Patterns. A Census Bureau publication organized by county and prepared on an individual state basis, this important reference provides data by SIC code and major industry group. Among the information provided include the number of establishments, number of employees, number of establishments by employment size, the number of large establishments, and payroll for states and counties. Through this source, the industrial marketer can readily identify the number of prospects in a market, determine whether the market is dominated by large or small firms, and estimate market share for a given industry and geographic area. Available on CD-ROM.

Dun's Census of American Business. Do you know how large the national market is for your product? Or where to find the greatest concentration of prospects for it? How about where to locate branches, outlets, and service centers? This source can answer these questions and more. Information includes sales volume, employee size, industry classification, SIC code, and other pertinent data.

Other Good Sources of Business Demographics. You might also check Markets of the U.S. for Business Planners by Thomas Conrov and Manufacturing USA, a Gale publication. Many state and local/county government agencies provide business demographic information. In addition, don't neglect consumer (Donnelley's *Market Profile Analysis) or secondary sources (such as The U.S. Industrial Outlook). These and many other nontraditional sources contain some business demographics, even though that is not their primary purpose.*

III. SECONDARY SOURCES

Business Indexes. Some of the major library indexes that you can use to access trade-related articles are *Predicasts F&S, Business Periodicals, Wall Street Journal, New York Times, American Statistical,* Business Index, and Magazine Index. Many of these are now available for use on a computer.

Computerized Databases. The latest and greatest entrant into the research 'arena," online databases are becoming more prevalent as a means of finding published information. There are now dozens of useful databases for marketing applications. Examples include Dialog, ABI Inform, Trade and Industry, the Predicasts' series, Nexis/Lexis, and; UMI's Newspaper Abstracts. See the Gale *Directory of Databases* for further information.

Directories. Trade directories are one of the best sources for market and customer information. Literally hundreds of specialized directories are available, and they can be of tremendous value to companies seeking marketing information. Some of the most widely used directories include *The Encyclopedia of Associations; National Trade and Professional Associations of the United States; Findex Directory of Market Research Reports, Studies, and Surveys; Thomas Register of American Manufacturers* (available on CD-ROM); *MacRAE's Blue Book; Ward's Business Directory of U.S. Firms;* state industrial directories; and Standard and Poor's and Dun and Bradstreet's directories. Don't know where to look? Consider Gale's *Directory of Directories.* It is an annotated guide to business and industrial directories, professional and scientific rosters, and other lists and guides of all kinds.

Statistical Sources. A variety of useful statistical sources provide descriptive information about markets. Some sources provide Statistics only, such as *Predicasts Forecasts.* Other sources, such as *The US. Industrial Outlook* and *Standard and Poor's Industry Survey's,* supplement statistical data with important narrative summaries. U.S. Department of Commerce publications are a good source to tap.

Trade Journals. Some of the best sources for market information are trade journals. These industry-specific publications contain a wealth of information, and one or more trade journals typically exist for virtually every major market or industry. To locate trade journals, a variety of sources can be consulted. Some of these include *Ulrich's International Periodicals Directory, Standard Rate and Data Service - Business Publications Rates and Data, Bacon's Publicity Checker, Writer's Market,* and the *Gale Directory of Publications and Broadcast Media.*

Trade Journals (Special Issues). Three of the best sources of trade information that is published infrequently are *Harfax Guide to Industry Special Issues, Special Issues Index by Greenwood Press,* and *Ulrich's Irregular Serials and Annuals.*